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Pigeon (Hemel Hempstead) Limited (Pigeon)

North Hemel Hempstead
(Land North of Redbourn Road (B487))
Hertfordshire

TRANSPORT POSTION STATEMENT

**Report on Proposed
Allocation of North Hemel Hempstead by
St. Albans City & District Council
(Transport Appraisal)**

December 2019

**North Hemel Hempstead
Land North of Redbourn Road (B487)
Hertfordshire**

Transport Position Statement

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Allocation of North Hemel Hempstead by
St. Albans City & District Council**

Contents	Page No.
1.0 Introduction	1
2.0 Site Location & Context	3
3.0 Policy Context	7
4.0 North Hemel Hempstead Overview	11
5.0 Transport Impacts	14
6.0 Sustainable Transport Strategy	16
7.0 Summary & Conclusions	19

Appendices

A	Location Plan
B	Site Access Strategy
C	Site Access Proposals
D	ATC Survey

NORTH HEMEL HEMPSTEAD – HERTFORDSHIRE
Land North of Hemel Hempstead / Redbourn Road (B487)

Transport Position Statement (Dec 2019)

**Report on Proposed Allocation of North Hemel Hempstead by
St. Albans City & District Council**

1.0 [Introduction](#)

General

- 1.01 This *Transport Position Statement* (TPS) has been prepared by *Lawrence Walker Ltd* (LWL) and was commissioned by Pigeon Investment Management Ltd on behalf of *Pigeon (Hemel Hempstead) Ltd* (Pigeon). Its purpose is to inform the iterative design process and form part of the evidence base in support of the proposed allocation of the North Hemel Hempstead Broad Location Site within the emerging St. Albans City and District Local Plan (The Local Plan) for a mixed-use urban extension. The allocation would see a minimum of 1,500 new homes and associated uses and infrastructure constructed across the site to the north-east of Hemel Hempstead, as shown at **Appendix A**. The site is referred to as *North Hemel Hempstead* within the Regulation 19 Publication Draft Local Plan, and likewise within this TPS, or simply as North Hemel.

Overview

- 1.02 The site is identified as a “Broad Location” for residential-led development within the Draft Local Plan Regulation 19 Publication Draft at Policy S6 (iv). There are a number of additional requirements noted, with the most relevant from a transport perspective being the need for improved Walking and Cycling links and a requirement for *Public Transport* (PT) service upgrades. Policies L17 (Infrastructure), L18 (Transport Strategy) and L19 (Highways & Access) are also of relevance and these are discussed later in this TPS.
- 1.03 The TPS provides an overview of the existing and emerging transport context in which the proposals are being brought forward from a site-specific perspective. It also provides additional information relating to the proposed access arrangements for North Hemel Hempstead and outlines a proposed *Sustainable Transport Strategy* (STS) intended to encourage sustainable travel patterns and minimise any impacts on the highway. The document supports submissions being made by Pigeon to the Local Plan EiP in relation to the site and its suitability, deliverability and sustainability.

Scope of Report

- 1.04 The TPS covers four aspects of the North Hemel development, being:-
- i) An overview of the relevant transportation policy context and associated evidence base, with a view to establishing what transportation requirements North Hemel Hempstead needs to meet going forward to be able to deliver a highly sustainable development in accordance with the NPPF and the requirements of Policy S6 iv;
 - ii) Proposals for access into and within the site - *The Site Access Strategy* - and delivery of the necessary physical infrastructure;

- iii) *Traffic Modelling* and the identification of potential traffic impacts and bottlenecks that require mitigation to facilitate the delivery of North Hemel Hempstead over the Plan period, and;
- iv) *Sustainable Transport* and the identification of Walking, Cycling and Public Transport Strategies commensurate with the Local Plan's objectives.

1.05 Each aspect is now assessed to demonstrate that, in LWL's view, in transportation terms the allocation as proposed can be regarded as sound.

2.0 Site Location & Context

Overview

- 2.01 The NPPF seeks to locate new development in areas that provide people with a choice of travel modes, so as to be able to offer safe and suitable access for all (Para 103). This is the key consideration from a spatial planning perspective and the fundamental reason for locating development at North Hemel rather than on the edge of smaller settlements in the District. It is also the underlying driver behind the *Sustainable Transport Strategy* (STS) being put forward by Pigeon.
- 2.02 From the outset, North Hemel as a “Broad Location” is well placed to accord with the principle of sustainable access and as such, opportunities will exist in the future to deliver a sustainable and modern development that does not result in significant impacts on the *Local Road Network* (LRN)

Location & Primary Road Access

- 2.03 The North Hemel Hempstead site sits towards the north-east of the town and fronts the B487 Redbourn Road (Hemel Hempstead Road), which connects with both Redbourn to the immediate east and thence the M1 at Junction 9 via the A5183. The road is mostly rural over this length with no footway provisions, but its character changes towards the west as it passes into the urban area beyond Holtsmere End Lane where footways are added. It is of adequate width and not congested, although local roundabout accesses to the Maylands Business Park further west towards Cupid Green experience some congestion at peak times.
- 2.04 In terms of geometry, both the existing alignment and topography allow for good visibility and this will enable the provision of safe and suitable access to the site in the future to be provided. As a “Broad Location”, North Hemel Hempstead will be well connected to the town through use of the B487 and this will allow key services and other local destinations to be reached easily and safely by all types of road uses in the future, as is required by the NPPF. Its proximity to East Hemel Hempstead and the advantages this delivers is discussed in more detail below.

Surrounding Development & Accessibility

- 2.05 As indicated on **Figure 1 at Appendix B**, North Hemel sits immediately to the east of the Woodhall Farm Estate and to the north of East Hemel; a fellow “Broad Location” housing site within the Draft Local Plan.
- 2.06 Perhaps more importantly, it also lies within close proximity to the Maylands Business Parks, approximately 1km to the south of the site. This presents an ideal opportunity in terms of employment for those wishing to live at North Hemel in the future. The proximity of this area and the ability to reach it easily and by all non-car means are discussed in more detail in **Section 6** of the TPS, but fundamentally it already employs over 18,000 people and through its designation as part of the *Herts Enviro-Tech Enterprise Zone* is due to expand by a further 10,000 jobs in the future. It is a major Employment Hub in close proximity to the site and represents a significant opportunity to locate new homes close to jobs, with scope to be accessed by sustainable modes without giving rise to any impacts on M1 Junction 8.

- 2.07 In specific terms, access to higher order facilities is an important consideration in directing growth. In this regard, there are multiple opportunities locally within Hemel Hempstead and these comprise the following, located within the neighbouring Woodhall Farm Estate and within easy walking distance of the North Hemel Hempstead Site boundary as per Figure 1:-

Woodhall Farm

- A Supermarket (Sainsbury's - at less than 100m)
 - A Secondary School (Astley Cooper - at approximately 1,000m)
 - A Community Centre (200m)
 - A Medical Centre (Woodhall Farm - at 200m)
- 2.08 In addition, Grovehill to the west provides further facilities within easy cycling distance of North Hemel and in the future, East Hemel will too. Here, easy access to the new Secondary School and extended employment areas are likely to be popular destinations.

Existing Highway Conditions

- 2.09 The highway network around Hemel Hempstead is focused on the M1 to the east and M25 to the south, with the A414 connecting the two through the centre of the town via the A41 out towards the west. Many of the roads serving the southern side of Hemel Hempstead are busy at peak times and locally, congestion centres upon M1 Junction 8 and the A414 Breakspear Way as commuters use the former to travel to work and back each day. As a consequence, journey times are often lengthy getting to and from the M1, but are generally less so around the northern side of the town and along roads leading to and from the North Hemel area in general. Here, only localised issues at Cupid Green are prevalent and these tend to be associated with Maylands Business Park traffic from the west in the morning. Further east, Redbourn Road, Cherry Trees Lane and routes into the Town Centre from the north-west are less problematic; barring minor delays exiting Holtsmere End Lane in the morning. Since the latter can be readily dealt with as part of the *Sustainable Transport Strategy*, neither it, nor delays affecting the M1 to the south immediately impact upon the delivery of North Hemel Hempstead as an allocation. Instead, and what is particularly worth nothing, is that access between it and the Maylands Business Parks is unfettered, and as a result the opportunity exists to provide a speedy and reliable Public Transport link between the two from day one.
- 2.10 To confirm this latter point, ATC counts were undertaken in October 2019 covering a seven day period (**Appendix D**). They identified few issues along Redbourn Road, where the 85thile speeds were typically around the 50mph mark in either direction, indicating neither congestion or speeding on what is an unrestricted road. Flows were quite tidal (eastbound in the morning and westbound in the evening) portraying an outbound commuter pattern as might be expected. This would be helpful to traffic from North Hemel wishing to reach the Maylands Business Parks of course, since it would be in the opposite direction and thus of only marginal concern. The flows themselves were not great either (being typically around the 650 vehicles per hour mark in the tidal direction) and suggested that the road is currently no more than 50% full. Since *Crashmap* advises that only 3 accidents have occurred along Redbourn Road as it passes the site in the last five years and all of them were "Slight", the use of the road as the main access is clearly both viable and sensible. Its quiet nature between the site and Maylands is thus confirmed, suggesting indeed that future opportunities do exist to provide a speedy and reliable Public Transport link between the two.

- 2.11 With regard to the M1 Junction 8, a series of transport infrastructure improvements and interventions are planned as part of the IDP, which include the phased upgrading of Junction 8; the construction of a Spine Road through East Hemel Hempstead between the Redbourn Road and A414 and improvements to the Breakspear Way Roundabout at Green Lane. These major interventions, together with more localised junction upgrades within the town itself, are to be funded collectively through a combination of Developer Contributions; CIL, Grants (such as HIF) and RIS2 Government Funding. All are covered by the MGCIP. Once in place, they should see the removal of local bottlenecks and provide better connectivity throughout the area (see also **Section 3**).

Public Transport

- 2.12 The North Hemel Hempstead Site is already highly accessible by Public Transport, with the nearest bus stops along Redbourn Road being only approximately 75m from the south-west corner of the site (**Appendix B**). Additional bus stops are also available in the neighbouring Woodhall Farm Estate, with excellent accessibility from the local footpath network. Both provide opportunities to access many local facilities and employment opportunities located within the town that can already be reached by bus.
- 2.13 In terms of the existing Public Transport services themselves, most notable amongst these is the Route 2 service operated by Arriva which provides up to six buses per hour and boasts an eleven-minute journey between 05:47 and 23:15 to and from the Town Centre respectively, serving Apsley Railway Station on its way via a short walk. The nearest Route 2 bus stops to North Hemel Hempstead sit close to its south-west corner as noted above, providing a regular and easily accessible service for future residents notwithstanding any new services or service extensions that may come forward as the proposed scheme progresses. Combined with the Route 46 that runs out to the east along Redbourn Road on an hourly basis, the site is very well served by Public Transport.

Cycle Links

- 2.14 One of the most notable features of Hemel Hempstead as a town is the compact nature of the services and facilities contained within it. North Hemel Hempstead's location on the northern-eastern edge of the town ensures that it is already highly accessible by non-car means to the existing and extensive range of services and facilities within the town, since all areas are within easy cycling distance and many within walking distance of it. The North Hemel Hempstead Site is therefore in a highly sustainable location in terms of its access to facilities by bicycle.
- 2.15 At present, the best and most important cycle link locally is *The Nickey Line*, which runs along the route of a former railway between Harpenden, Redbourn and Hemel Hempstead via a tunnel beneath the M1. It provides a non-vehicular link to the centre of the town; passing and providing access to numerous local facilities and higher order services on the way (**Appendix B**). Running just to the south of Redbourn Road, it represents a ready-made route for North Hemel cyclists and whilst a few local upgrades would be beneficial, is of a high quality. Access to it from the North Hemel Site is discussed later in **Section 6**.
- 2.16 Other important local routes comprise Cherry Tree Lane & Three Cherry Trees Lane to the south-west, which both provide quiet and pleasant local connections to Maylands, and Redbourn Footpath 013. It runs parallel with the former some 50m to the east and connects with *The Nickey Line* and beyond to the south of the site.

Walking

- 2.17 As described above, there are a numerous local destinations and facilities that can easily be reached on foot from the North Hemel Hempstead Site. In particular, the Site is within walking distance of the Woodhall Farm Community Centre and both Primary and Secondary Schools within the neighbouring Woodhall Farm neighbourhood, together with Sainsbury's supermarket. These will be supplemented by the provision of new facilities as part of the proposed scheme, as explained further in **Section 4**. The addition of a new Secondary School at East Hemel Hempstead will also add to its accessibility to key services and facilities and as with cycling, the Maylands Business Park areas can be reached easily via Cherry Tree Lane, which is both direct and quiet.
- 2.18 As a result of the above provisions, the North Hemel Hempstead "Broad Location" Site is highly accessible by foot to a range of services and facilities in accordance with NPPF requirements.

PROW's

- 2.19 The areas to the north and east of site are rural, meaning that walking for leisure purposes will be well served too. There are several PROW's that give access to these areas and these will be incorporated into the Masterplan and enhanced in order to provide enhanced access to the countryside and help to meet leisure and recreational needs.

3.0 Policy Context

The NPPF

- 3.01 Delivery of the site will need to meet the requirements of the NPPF and particularly Paras 103, 105(a), 105(d), 108 and 109. These require that transport issues should be considered at the earliest stage of plan making and development proposals opportunities from proposed transport infrastructure can be accommodated, to maximise opportunities for walking, cycling and use of public transport and minimise or mitigate impacts of traffic and transportation infrastructure.
- 3.02 Of particular significance, paragraph 103 highlights that the planning system should actively manage patterns of growth in support of these objectives. It states that significant development should be focussed on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes as is the case with North Hemel Hempstead. As well as reducing congestion, it notes that this can have wider benefits in terms of reducing emissions, improving air quality and public health.
- 3.03 The NPPF outlines that Local Authorities should seek to provide infrastructure necessary to support sustainable economic growth. In respect of planning decisions, key considerations are ensuring that opportunities for travel by sustainable modes are taken up; safe and suitable access to the site can be achieved and measures to cater for the residual impacts can be undertaken in order to limit the significant impacts of development.
- 3.04 In help achieve this, developments should seek to accommodate efficient delivery of goods and supplies; give priority to non-car modes of transport; create layouts which minimise conflict between traffic and cyclists or pedestrians; incorporate facilities for ultra-low emission vehicles and consider the needs of disabled people. All of these measures can be accommodated at North Hemel Hempstead.
- 3.05 Finally, Para 109 notes that for sustainable sites, development should only be prevented or refused on highways grounds if the residual cumulative impacts on the road network or road safety would be severe.

Local Plan Policy Requirements

- 3.06 Whilst currently in the Green Belt, the *North Hemel Hempstead Broad Location Site* is identified under Policy S6 (iv) of the St Albans Publication Draft Local Plan 2020-2036. It proposes the provision of a major urban extension to Hemel Hempstead, including: the development of a minimum of 1,500 Dwellings; provision of Care Facilities; new Neighbourhood & Local Centres including commercial development opportunities and community and health facilities and a 3-Form Entry Primary School with pre-school facility.
- 3.07 In respect of transport, the Draft Policy requires provision of a suitable transport network for the site including new Walking & Cycling links and Public Transport services upgrades and improvements. It notes that delivery of approximately 1,000 dwellings would continue beyond the end of the Plan period in 2036. Accordingly, the supporting Housing Trajectory assumes that 575 dwellings will be provided within the Plan Period, with the rest being delivered beyond that date. The issue of the phasing of the housing delivery is considered further in **Section 5** of the TPS.

- 3.08 In addition to Policy S6, Policies L17, L18 & L19 are relevant, which broadly identify the following requirements with respect to North Hemel Hempstead:-

Policy L17

- 3.09 L17 states that the Council will require the programmed delivery of a wide range of infrastructure and related facilities within the District to meet identified needs arising from new development and to address any infrastructure deficits. Any infrastructure provided has to be reasonably related to the development proposed but by necessity, may have to meet wider needs. The programme is outlined in the *Infrastructure Delivery Schedule* (IDS) but sets out only limited physical requirements in terms of transport infrastructure improvements as noted below to be provided by North Hemel Hempstead. Instead, obligations mainly comprise contributions towards connections to the A414 through East Hemel Hempstead; improvements to the former and to M1 Junction 8. Other more local improvements are to be only as identified as part of a Transport Assessment.
- 3.10 The Council will require in kind provision and / or financial contributions to enable the delivery of North Hemel Hempstead, secured and phased through a combination of *Planning Obligations* (S106) and use of *Community Infrastructure Levy* (CIL). Where piecemeal developments form components of larger development areas, they will be treated as part of the wider area and required to make infrastructure contributions to the wider development. Essentially therefore sites will be expected to provide for their own needs and mitigate their own impacts, but also contribute towards the wider infrastructure requirements on a proportionate basis. This TPS seeks to identify at **Sections 4 & 5** how North Hemel Hempstead can do this.

Policy L18

- 3.11 L18 approaches sites from a sustainable travel perspective, identifying requirements for a Transport Strategy and Travel Plan that will ultimately be expected of each. It sets no targets however for *Single Occupancy Car Drivers* (SOCD) and instead seeks to maximise non-car use by the provision of high-quality Walking, Cycling and Equestrian connections, together with Public Transport improvements. Even so, it identifies that major improvements will still be required along the A414 and at Junction 8 of the M1 and that these should be delivered in part by the “Broad Location” sites. **Section 4** of the TPS seeks to identify how North Hemel can assist, whilst **Section 6** demonstrates its sustainability credentials.

Policy L19

- 3.12 Covering access requirements from a largely highways perspective, L19 dictates that each site with a significant traffic generating potential must ultimately meet Road Safety, Geometric and Travel & Traffic Assessment objectives. It also notes that developments will be refused permission if residual cumulative impacts of their traffic are severe, which is a direct quote from Para 109 of the NPPF. **Section 5** of the TPS seeks to demonstrate that such an impact is unlikely to arise due to North Hemel Hempstead at any stage, either with or without other major sites and their associated traffic and/or infrastructure.

The IDP & Transport Infrastructure

- 3.13 The IDP is largely underpinned by the IDS and it in turn relies on the COMET: 2036 *Local Plan Run 4* (LP4) model run in terms of infrastructure requirements as discussed below. CIL contributions are derived on the basis of what can reasonably be afforded by the various development types and a figure of £2,450 per dwelling is noted. Each of the “Broad Location” sites is then expected to contribute on a pro-rata basis and also look to assist overall viability through phased delivery and the identification of interim solutions where appropriate.
- 3.14 In terms of key transport infrastructure to be delivered by North Hemel Hempstead, the IDP on Page 98 confirms that the site is *not* required to deliver any specific highways improvements; instead funding Walking, Cycling and Public Transport links from North Hemel to the Maylands Business Parks (Page 116). These are described later in the TPS. The IDP does however confirm that the site is required to deliver *local* highway improvements through a *Transport Assessment* (TA), including the new Site Access Junction(s) and internal on-site roads. A more general financial contribution towards the other components of the IDP will be expected too. The non-vehicular access to Maylands is within the ability of the site to deliver and this is covered by **Section 6** of the TPS.
- 3.15 In terms of phasing, much of the work done to support the IDS is based on LP4, which comprises mainly an assessment of the ultimate situation in 2036 whereby all of the housing has been occupied and all of the strategic road improvements built. It is comprehensive and robust in this respect, but more detailed work will be undertaken by TCE and Pigeon ahead of the preparation of the Masterplans and any Planning Application to determine phasing (see also **Section 5**).

The Maylands Growth Corridor Investment Prospectus of Jan 2018 (MGCIP)

- 3.16 The MGCIP identifies succinctly what infrastructure is assigned to which development and is a useful repository of information in that respect. In particular, it notes at SC1 and SC2 how the M1 Junction 8 works are to be dealt with and likewise the A414 at SC1(ii), with East Hemel Hempstead taking the lead. For North Hemel Hempstead, the document confirms that it will be required to deliver mainly the Redbourn Road Site Access and internal transport infrastructure. Public Transport is discussed on Pages 29 & 30, although no specific requirements are confirmed. It does however highlight the possibility of upgrading the Route 46 and the Route 2 operated by Arriva and these are examined in more detail within **Section 6** of the TPS.
- 3.17 Today, around 79% of travel within the area is met by SOCD usage, as is noted on Page 6. This is relatively high for such a large town and is no doubt influenced by the nearby presence of the M1. Non-vehicular linkages to North Hemel are therefore likely to be important in the future and these will be given due consideration.

The Hertfordshire Infrastructure & Funding Prospectus 2018 (HIFP)

- 3.18 The document sets out a range of strategic infrastructure requirements to support planned growth across the whole of the County and how these are to be funded and delivered, including the identification of any gaps or shortfalls that need to be addressed. Transport Infrastructure is a key element of the Prospectus and the document puts forward a number of funding proposals in this respect. The ability of each of the “Broad Location” sites to deliver at a local level and provide supporting infrastructure in terms of new roads and improvements where appropriate is also noted. This aspect is covered by **Section 5** of the TPS and where phasing can further help reduce the up-front cost and aid viability, this has been identified.

Hertfordshire Local Transport Plan 4 (LTP4) 2018-2031

- 3.19 Hertfordshire’s LTP4 covers the period up to 2031, so is relevant for most of the Draft Local Plan. It sets out a number of objectives, with key issues being provided at Figure 5.2. Of these, the most relevant to North Hemel is the lack of accessibility by non-car modes to employment areas. This key issue is addressed later in the TPS.
- 3.20 In terms of objectives, LTP4 covers these in Section 6, with a number of Policies and Activities being presented. These include moves to Reduce Travel Demand; influencing Travel Behaviour, influencing Land Planning and promoting the adoption of Travel Plans. Walking & Cycling are actively encouraged, as is the use of Public Transport. All aspects are already given high priority at North Hemel Hempstead as part of Draft Local Plan, so will be properly covered.

The Hemel Garden Communities Charter (HGCC)

- 3.21 The HGCC sets out the vision for the Hemel Garden Community as a whole and is intended to cover some 10,000 dwellings and 10,000 new jobs. Pigeon fully supports the aspirations of the HGCC and will ensure that the site aligns with the exemplar principles of development enshrined within it. In particular with respect to the TPS, Walking & Cycling and Public Transport are to be given high priority, as discussed in **Section 5** herein.

4.0 [North Hemel Hempstead Overview](#)

Overview and Context

- 4.01 As noted above, the North Hemel Hempstead Site is located in a highly sustainable location to the north-east of the town, with excellent accessibility to a wide range of facilities by a choice of existing transport modes. The proposed scheme will take advantage of this by connecting into and enhancing existing linkages.
- 4.02 North Hemel Hempstead will provide a sustainable residential-led urban extension to the north-east of the town for a minimum of 1,500 Dwellings, together with: Care Facilities; Local & Neighbourhood Centres incorporating health and community facilities and commercial employment opportunities; a 3 Form Entry Primary School with pre-school places and a new Country Park, encompassing extensive areas of Public Open Space and supporting infrastructure.
- 4.03 The North Hemel Hempstead proposal forms part of a wider area of growth proposed around the east of Hemel Hempstead. Together with the East Hemel Hempstead “Broad Location” Sites to the south owned by the Crown Estate, they will collectively provide over 4,000 new homes along with 10,000 new jobs as part of the expansion of the Maylands Business Park, following its designation as part of the Hertfordshire Enviro-Tech Enterprise Zone.
- 4.04 There are also wider proposals for growth around the North of Hemel Hempstead too within Dacorum Borough, as part of the “Hemel Garden Communities” proposals. These remain at an early stage however, with further details of the potential growth within Dacorum Borough to be detailed within the emerging Dacorum Borough Local Plan in due course.

Transport Considerations

- 4.05 The Site sits immediately to the north of the B487 Redbourn (Hemel Hempstead) Road from where the main access will be provided. Given the wider development aspiration at East Hemel Hempstead and The Crown Estate’s proposals for access specifically to the East Hemel Hempstead (North) site, it is important that any access proposals on Redbourn Road are consistent with and tie-in with those for East Hemel Hempstead. Furthermore, in view of the wider Hemel Garden Communities proposals and the potential for further development in *Dacorum Borough*, it is also important that any access proposals do not prejudice or pre-empt this possibility in the future. With the former, this means a joined-up approach to accessing the B487 Redbourn Road whilst for the latter, it means making sure that whatever is provided allows for the delivery of further development to the north. This could include potential road linkages through to the land around the north of Hemel Hempstead within Dacorum (given references in LP4 as a single carriageway Distributor Road).
- 4.06 Overall however, the key consideration is actually to ensure that appropriate crossing points for pedestrians and cyclists are provided across the B487 Redbourn Road to integrate the Site and avoid severance. Ensuring that North Hemel Hempstead is fully integrated into the wider foot and cycle path network is part of this, as is providing excellent access to both facilities within East Hemel Hempstead and the Maylands Business Park for non-car users. Crossing this road safely and easily is vital, and for this reason the chosen junction layout has been developed so as to prioritise non-car use throughout. *The Nickey Line* sits to the south too, so reaching it quickly and safely is also a key objective.

- 4.07 Finally, there is the need to contribute towards the delivery of wider transport infrastructure improvements identified within the MGCIP strategy to further mitigate any wider impacts on the highway network. A phased approach to access from the B487 Redbourn Road is thus called for, and the proposals presented at **Appendix B** allow for this.

Site Access Strategy

- 4.08 There are basically five key considerations with respect to access, and these are:-
- i) Provision of a safe and deliverable access into the North Hemel Hempstead site to facilitate housing delivery by 2031 at the latest;
 - ii) Safe and efficient crossing of the B487 Redbourn Road for non-car users to maximise opportunities to link into existing and proposed pedestrian and cycle routes and maximise opportunities to access services and facilities by non-car modes;
 - iii) Providing a permeable and accessible layout as part of the Masterplanning of the site which encourages safe and convenient travel by means other than the car, including an extensive interconnected pedestrian & cycle path network and suitable Public Transport routes;
 - iv) Providing flexibility in terms of access into the site for various modes, including the provision of more than one point of access as the scheme progresses, and;
 - v) Futureproofing the layout to provide flexibility for any further growth in Dacorum Borough as part of the Hemel Garden Communities proposals.
- 4.09 With the above points in mind, a layout has been developed that is based on two junctions with associated Toucan crossings that can be built independently and in phases, but that will ultimately act well together. The principles are demonstrated at **Appendix B**, whilst **Appendix C** shows the layout in its final form.
- 4.10 It essentially comprises the following components:-
- i) A new *Roundabout* junction onto the B487, which will also serve the East Hemel “Broad Location” site to the south and be capable of accommodating both traffic signals (if needed) and more general future-proofing to provide additional capacity to accommodate any further growth associated with the wider HGC proposals. The junction would also provide access indirectly to the M1 at Junction 8 via the East Hemel Spine Road; thereby avoiding roads to and from the Town Centre;
 - i) A *T-Junction* off the B487 Hemel Hempstead / Redbourn Road, which will serve as the secondary access point for the site and also provide flexibility in delivering the scheme. It is possible that this secondary access could revert to being mainly for buses in later life, and;
 - ii) A wide *Toucan Crossing* that will allow the safe and efficient crossing of the B487 for non-motorised users. A key feature of the overall design, the crossing will ensure that access to *The Nickey Line* is available early, whilst also ensuring that what is provided is compatible with the road junctions either side. As the main non-vehicular access, providing it with a permeable road layout within the site that offers good quality foot and cycle path connections to the wider network on Redbourn Road and beyond is important too.

- 4.11 Overall, the transport strategy will provide safe and accessible road, pedestrian and cycle routes to enable the delivery of the proposed scheme and maximise opportunities for sustainable travel. The access arrangements from the B487 Redbourn (Hemel Hempstead) Road have been discussed and agreed with *The Crown Estate* (TCE) to the south with respect to East Hemel Hempstead, and can be delivered in their entirety utilising land within the ownership of Pigeon and the Crown Estate together with the public highway. A *Statement of Common Ground* (SoCG) with The Crown Estate accompanies the submission to this effect. More details regarding the junction's potential capacity and operation are provided in **Section 5** of the TPS.
- 4.12 Finally, in terms of Geometry, the Site Access Roundabout is capable of being delivered to fully accord with DMRB Standards (CD116), including visibility as based on the ATC speed surveys recently undertaken. The other two components of the STS likewise. The proposed access is fully deliverable, since Pigeon and TCE control the entire frontage of both sites along the B487 and are working collaboratively to deliver this as confirmed by the *Statement of Common Ground*.

5.0 Transport Impacts

Current Position & Phased Delivery

- 5.01 Extensive work has already been undertaken by St. Albans City and District Council in support of their Publication Draft Local Plan and LP4 has been submitted as part of the evidence base in support of the Local Plan. It deals with traffic impacts at a strategic level (as required by the NPPF) but it does not look at site-specific issues. It nevertheless notes that given North Hemel Hempstead's location, there is a significant interaction with the Maylands Business Park areas and routes west of the development to and from the Town Centre. This aspect is considered in more detail within **Section 6**.
- 5.02 Specifically, what is required of North Hemel Hempstead in terms of infrastructure is covered by the IDP and in terms of delivering housing, the housing trajectory. As noted at **Section 3.10** above however, North Hemel is not required to deliver any major infrastructure itself, but instead is expected to provide improvements to Walking, Cycling and Public Transport links between it and the Town Centre, via Maylands. The timescales for improving M1 Junction 8 are less critical therefore, so there is likely to be scope for the site to deliver some housing in advance of 2031/32 target through the early implementation of these links. The new Shuttle Bus described in **Section 6** below would be particularly relevant in this instance, as would new footways and cycleways.
- 5.03 That said, COMET is a strategic model and is not designed to allow such a bespoke phasing strategy to be developed per-sae. It notes instead at Para 1.4.2 that pedestrian and cycling measures in particular have not been modelled, suggesting that at this stage that this provides a worse case and that localised walking and cycling improvements may lead to further reductions in traffic albeit an alternative approach is required if one wishes to determine their overall beneficial impacts in advance of more localised modelling.
- 5.04 Whilst this work is ongoing, it is important to note what LP4 says about North Hemel Hempstead in terms of what it shows at 2036; the underlying assumptions made and the conclusions reached. Overall, it concludes that road conditions in 2036 *will* be satisfactory,. It also notes at Para 7.1.2 that whilst there are several areas of congestion and delay around the District, there are no obvious "Showstoppers". Again therefore, this would suggest a degree of tolerance in terms of when things happen. There is more that can be added too to this accretion, by cross referencing the housing trajectory with the Maylands Growth Corridor schemes.
- 5.05 Firstly, by 2031/32 when North Hemel Hempstead is projected to come forward, East Hemel (North) will be nearly complete and hence the Link Road between A414 Breakspear and Redbourn Road and improvements to M1 Junction 8 must be in place too. It then follows that delivery of housing at North Hemel commencing in 2031/32 is likely to be a conservative assumption, since much of the related East Hemel infrastructure must, be largely in place by that date. An appropriate strategy based on new PT linkages and local improvements would then surely allow the delivery of housing at North Hemel earlier, rather than later.
- 5.06 Secondly, LP4 itself does not indicate that any of the sustainable measures proposed would conflict with the planned growth. It does however note at Para 7.1.3 that greater improvements to those listed in Appendix B could be considered going forward.

- 5.07 It then follows that if such measures *were* to be provided, the impact of traffic assessed in LP4 would go down, leading to yet more flexibility in terms of when development is delivered relative to the identified road improvements.
- 5.08 Finally, LP4 also notes at Para 7.2.4 that the modal shift is not based on any specific proposal. In so doing it notes instead that once these become defined, they should be coded into the model and the forecasts re-run. Clearly the implication is then that the resultant traffic impacts would go down as a result of such interventions even further, again leading to more flexibility.
- 5.09 In conclusion and based on the above macro-level assessment, LWL is of the view that it would be feasible to develop the first 200-300 units at North Hemel early (i.e. commencing 4/5 years before the 2031/32 target) from the Redbourn Road access without major off-site infrastructure having been fully completed. Local improvements would be required at several locations including Cupid Green, but these would be manageable. Impact at M1 Junction 8 and along the A414 would be minor. The key to early delivery would however be the provision of non-car links to Maylands, which are now discussed in **Section 6** below. These would then need to be modelled in COMET as is noted above, in order to verify their effectiveness numerically.

Site Access Junctions (2036)

- 5.10 Future modelling work aside, sufficient data does exist to allow a JUNCTIONS 9 model of the combined Site Access Junction to be developed and run in due course. The results of this work show that even if all future development were to take place both within St. Albans District and Dacorum Borough, the **Appendix C** layout would still function well within design requirements and cause minimal delay in the 2036 Design Year. It should be noted that this is for the full 1,500 dwelling potential allocation at North Hemel. As a result, the proposed layout is deemed appropriate and NPPF compliant at the Local Plan stage.

6.0 Sustainable Transport Strategy (STS)

Introduction

- 6.01 From the outset, the aim of North Hemel Hempstead will be to deliver an environment whereby travel by car is not the first choice option. Maximising opportunities for travel by other means and encouraging modal shift will minimise impacts on the highway network and are a core part of the HGCC, which in turn sets out some fairly ambitious targets in this regard. This section of the TPS provides a holistic strategy for non-car travel at North Hemel Hempstead, including a range of potential measures which collectively provide a framework for achieving high levels of non-car usage. The specific targets proposed generally accord with, if not exceed, the expectations of the MGCIP.

Internalisation

- 6.02 *Internalisation*, or the ability of developments in general to contain trips wholly within their demise by providing on-site facilities and services is an important consideration in establishing a *Sustainable Transport Strategy* (STS). At North Hemel, opportunities for peak hour internalisation are provided by the inclusion of a Local / Neighbourhood Centre (including community facilities and limited employment opportunities) along with the associated Pre-school. Care Facilities will provide opportunities, alongside the inclusion of Full Fibre Broadband to each dwelling which should provide opportunities for home working. When then taken in the context of the North & East Hemel Hempstead Broad Location Sites together, opportunities for the internalisation of trips would be significant - given the higher-order services such as the Secondary School and Business Park that the latter provides. Before it ever leaves therefore, the opportunity will exist at both sites to minimise traffic and mitigate any potential traffic impacts at source. Internalisation, in the truest sense, and Pigeon's aspiration is that at least **25%** of all movements will be expected to be met by either internalisation or home working.
- 6.03 To maximise the benefits that internalisation potentially offers, the layout of the proposed scheme and pedestrian and cycle network in general have been designed to include extensive gently sloping cycleway and footway connections between all parts of the Site and also between the site and East Hemel Hempstead with links into *The Nickey Line* from the outset. The intention is to ensure that as many journeys as possible remain "on-site" through internalisation and that those leaving the site can be made easily either on foot or by cycle (**Appendix B**). Many existing areas and facilities are within easy cycling distance of the site too and as a result, the Illustrative Masterplan seeks to help encourage foot and cycle use through good design and the easing of existing gradients along alternative routes. Overall therefore, as many journeys as possible will remain within the limits of the two sites and be undertaken by foot or cycle, avoiding impacts on the surrounding road network.

Public Transport Strategy (PTS)

- 6.04 The key objective of the *Public Transport Strategy* (PTS) is to achieve a sustainable community at North Hemel that realises the full development potential of the site whilst fitting within the constraints of the existing highway network. A key component in achieving this is providing a highly attractive alternative to the private car, which should then give rise to further modal-shift and hence a reduction in traffic and mitigation of any impacts. This approach is fully consistent with the National, Regional and Draft Local Plan Policies and underpins the transportation strategy for North Hemel Hempstead.

- 6.05 As a headline figure, Public Transport services are targeted by Pigeon with providing for **15%** of all daily travel needs associated with the development. To achieve this level of use, the services must be reliable, convenient, clean, comfortable, safe, affordable and advantageous in terms of journey time and cost when compared to the equivalent car journey. In summary, they must be of high quality.
- 6.06 Given the relatively good existing provision, it is proposed that at least part of the Public Transport offer for North Hemel Hempstead will include the existing Route 2, Route 46 and Route 759 services in a modified guise (**Appendix B**). These provide excellent accessibility to the Town Centre and Apsley Rail Station. However, and in addition, it is proposed to provide a Shuttle Bus service from the North Hemel Hempstead Site to the Maylands Business Parks to improve connectivity to and from that area. This could possibly be combined in the future with the Town Centre Shuttle between it and Maylands that is planned as part of the IDP.
- 6.07 Accessing the site from the B487 via the secondary access, the service would terminate at the Local Centre. The service would offer important links for local journeys (Maylands Business Park) with the potential for all services to run through East Hemel. Such a service would benefit both sites in terms of viability and would also significantly reduce car dependency within Hemel itself.
- 6.08 The service would be delivered by the development through the Section 106 process and offer the potential to combine with other developments, local operators and service providers to deliver a more extensive network in the future.

Walking & Cycling - The Nickey Line and Other Local Routes

- 6.09 As noted above, one of the most notable features of Hemel Hempstead is the compact nature of the town and the services and facilities contained within it. North Hemel Hempstead's location on the edge of the town ensures that it will be highly accessible to the extensive range of services and facilities within the town. All areas are within easy cycling distance of the North Hemel Hempstead Site and many within walking distance, making it a highly sustainable location for development.
- 6.10 At present, the best and most important pedestrian and cycle link locally is *The Nickey Line*, which runs along the route of a former railway and provides a non-vehicular link to the centre of the town passing numerous local facilities and higher order services on the way (**Appendix B**). It is a ready-made pedestrian and cycle route which could be used by North Hemel Hempstead residents and whilst a few local upgrades are needed (as identified in the MGCIP and earmarked for delivery in the IDP by East Hemel Hempstead) it is already of a high quality.
- 6.11 Access to it from the North Hemel Hempstead Site would be provided across the B487 Redbourn Road as noted above and would take the form of a new and wide Toucan Crossing built alongside the proposed T-Junction providing a secondary access to the site and making its use both safe and convenient for non-car travellers. The crossing would also double-up as a link though to the East Hemel Hempstead site and the proposed Secondary School within it; again, combining safety with ease of access for those wishing to travel to and from this area.

- 6.12 As noted above, the intention overall is to ensure that as many journeys as possible remain “on-site” through internalisation. However, for those leaving the site it is Pigeon’s intention that at least **10%** of such journeys will be made either on foot or by bicycle. To help deliver this target, upgrading of the existing footway and cycleway connections towards the Town Centre along the B487 is proposed, together with specific and localised improvements to *The Nickey Line*, *Cherry Tree Lane* and *Three Cherry Trees Lane* in accordance with the Maylands Growth Corridor Prospectus where each interacts with the local road network. The intention is that these routes would be upgraded by the development in accordance with a specification to be agreed as the site progresses to form the main non-car links to the town.

Car Sharing

- 6.13 Car sharing can be an effective means of reducing the number of cars driven to and from the work place and is particularly useful in doing so amongst shift workers, of which there is a significant proportion within Hemel. For this reason, it forms an important component of the transport strategy for North Hemel and is expected by Pigeon to cater for **10%** of total commuter movements.

Travel Planning – An STS Summary

- 6.14 Based on the above proposals, a number of sustainable transport measures will be included as part of the North Hemel Hempstead scheme that should substantially reduce car usage to maximise opportunities for sustainable travel and minimise impacts on the Local Highway Network. These measures would be developed further as part of a bespoke *Travel Plan* (TP) submitted with any future planning applications. They would be co-ordinated by a Travel Plan Co-ordinator, who will be targeted with achieving a 40% peak hour single occupancy car usage level once the development has been fully built-out. The proposal will then fully accord with the HCGC and in this respect it should be noted that the current figure within Hemel Hempstead is 79%.

7.0 Summary & Conclusions

Summary

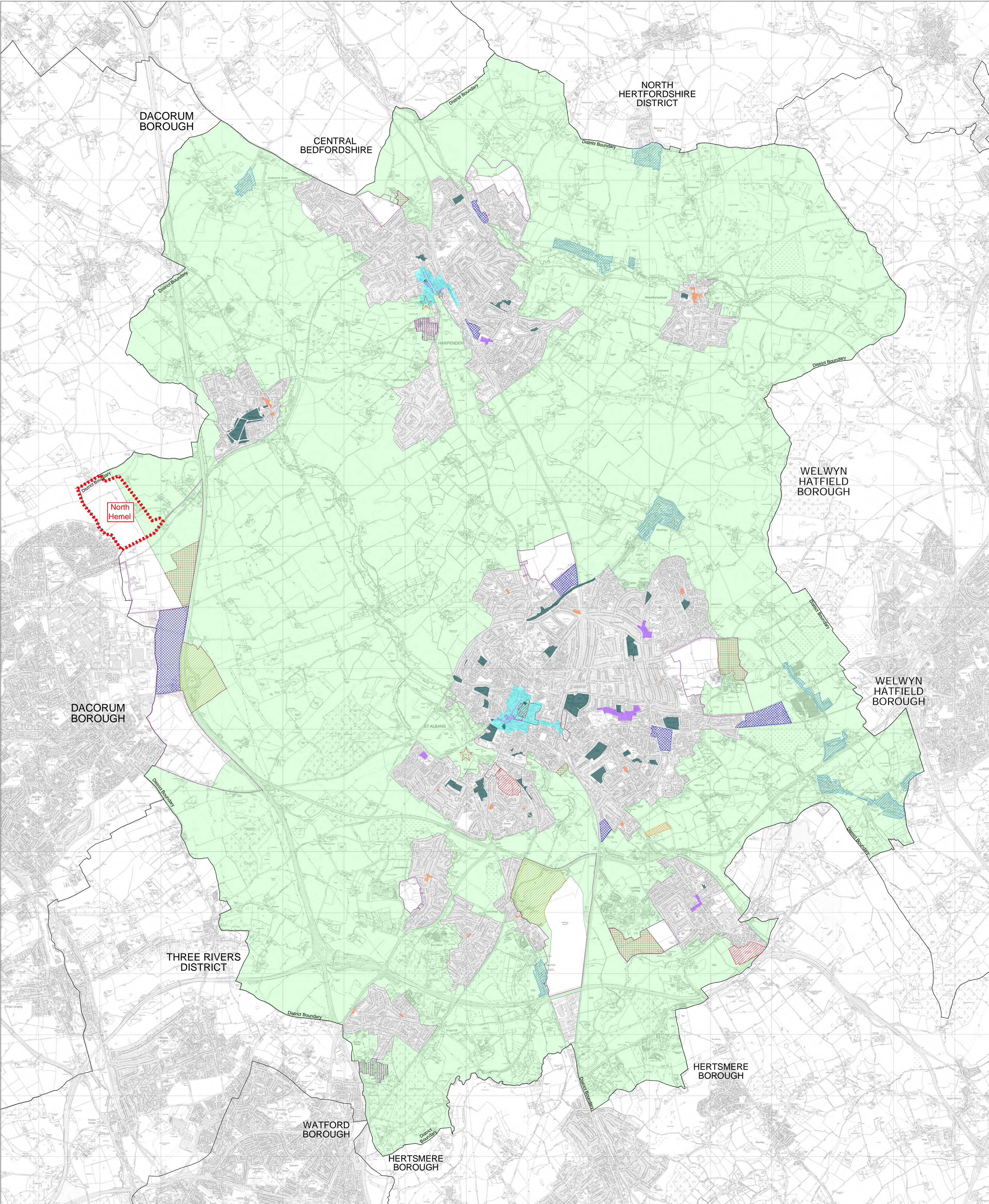
- 7.01 This *Transport Position Statement* (TPS) has been prepared by *Lawrence Walker Ltd* (LWL) and was commissioned by Pigeon Investment Management Ltd on behalf of *Pigeon (Hemel Hempstead) Ltd* (Pigeon). Its purpose is to inform the iterative design process and form part of the evidence base in support of the proposed allocation of the North Hemel Hempstead Broad Location Site within the emerging St. Albans Local Plan for a mixed-use urban extension. The allocation would see a minimum of 1,500 new homes and associated uses and infrastructure constructed across the site to the north-east of Hemel Hempstead as shown at **Appendix A**.
- 7.02 The site is referred to as *North Hemel Hempstead* within the Regulation 19 Publication Draft Local Plan and is identified as a “Broad Location” for residential-led development. There are a number of additional requirements noted, with the most relevant from a transport perspective being the need for improved Walking and Cycling links and a requirement for Public Transport service upgrades. Policies L17 (Infrastructure), L18 (Transport Strategy) and L19 (Highways & Access) are also of relevance.
- 7.03 The TPS provides an overview of the existing and emerging transport context in which the proposals are being brought forward from a site-specific perspective. It also provides additional information relating to the proposed access arrangements for North Hemel Hempstead and outlines a proposed *Sustainable Transport Strategy* (STS) intended to encourage sustainable travel patterns and minimise any impacts on the highway. This report supports submissions being made to the Local Plan EIP in relation to its suitability, sustainability and deliverability.

Conclusions

- 7.04 The main findings of the TPS are:-
- i) Development of North Hemel Hempstead would be NPPF and Draft Local Plan compliant. It is a sustainable location for housing and can be made more-so though the delivery of high-profile non-car sustainable transport options;
 - ii) All travel modes would be able to access the site in a safe and convenient way from the B487 through a *Site Access Strategy* that provides a series of interlinked signalised junctions. Such a strategy would meet any long-term aspirations for development to the north of Hemel Hempstead as part of the wider HGC proposals;
 - iii) With the implementation of appropriate sustainable transport measures, the North Hemel Hempstead site is capable of coming forward to enable commencement of housing completions earlier than 2031/32 if required without significant transport impacts, and;
 - iv) The site is capable of meeting the required mode-share target through the delivery of 60% non-car use.

Appendix A

Location Plan



Local Plan Policies Map

- Key**

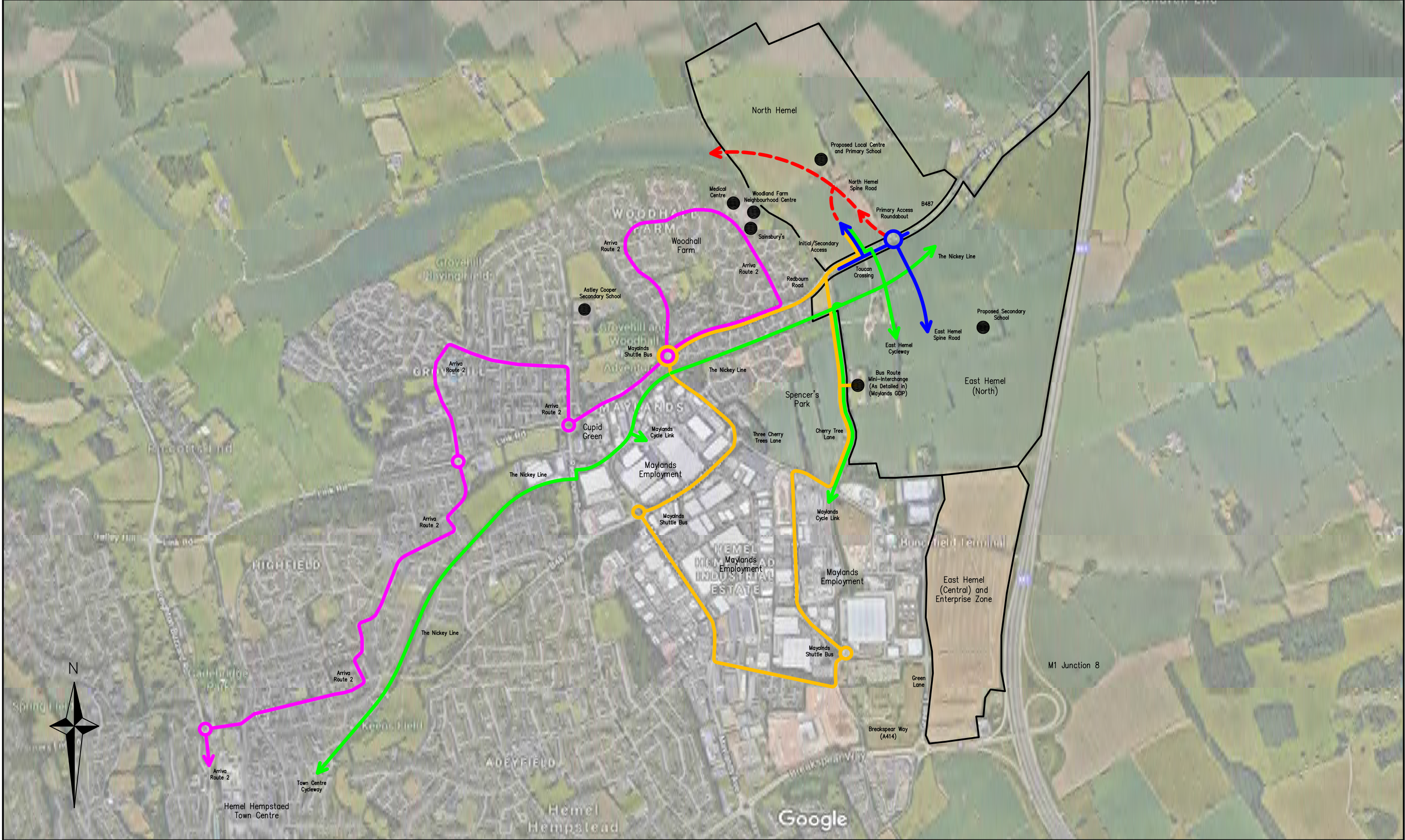
 - S3 Metropolitan Green Belt
 - S6 Broad Locations for Development (wider boundaries including retained Green Belt)*
 - L5 Small Scale Development in Green Belt Settlements
 - L8 Primarily Residential Areas
 - L9 Primarily Business Use Areas
 - L10 Strategic Office Locations
 - L11 Special Employment Locations in the Green Belt
 - L12 (Town Centres)
 - L12 (District Centres)
 - L12 (Local Centres)
- L12 (Key Shopping Areas)
 - L16 Mixed Use Opportunity Areas
 - L18 Transport Strategy (improvements in Green Belt)
 - L21 Education (in Green Belt)*
 - L22 Community Leisure and Sports Facilities (London Road Cemetery Extension)
 - L22 Community Leisure and Sports Facilities (Leisure Facilities Enhancement Opportunity)
 - L26 Local Green Space

*NB: the extent of the school sites shown are only indicative areas of search and are mostly much larger than the areas that will ultimately be needed



Appendix B

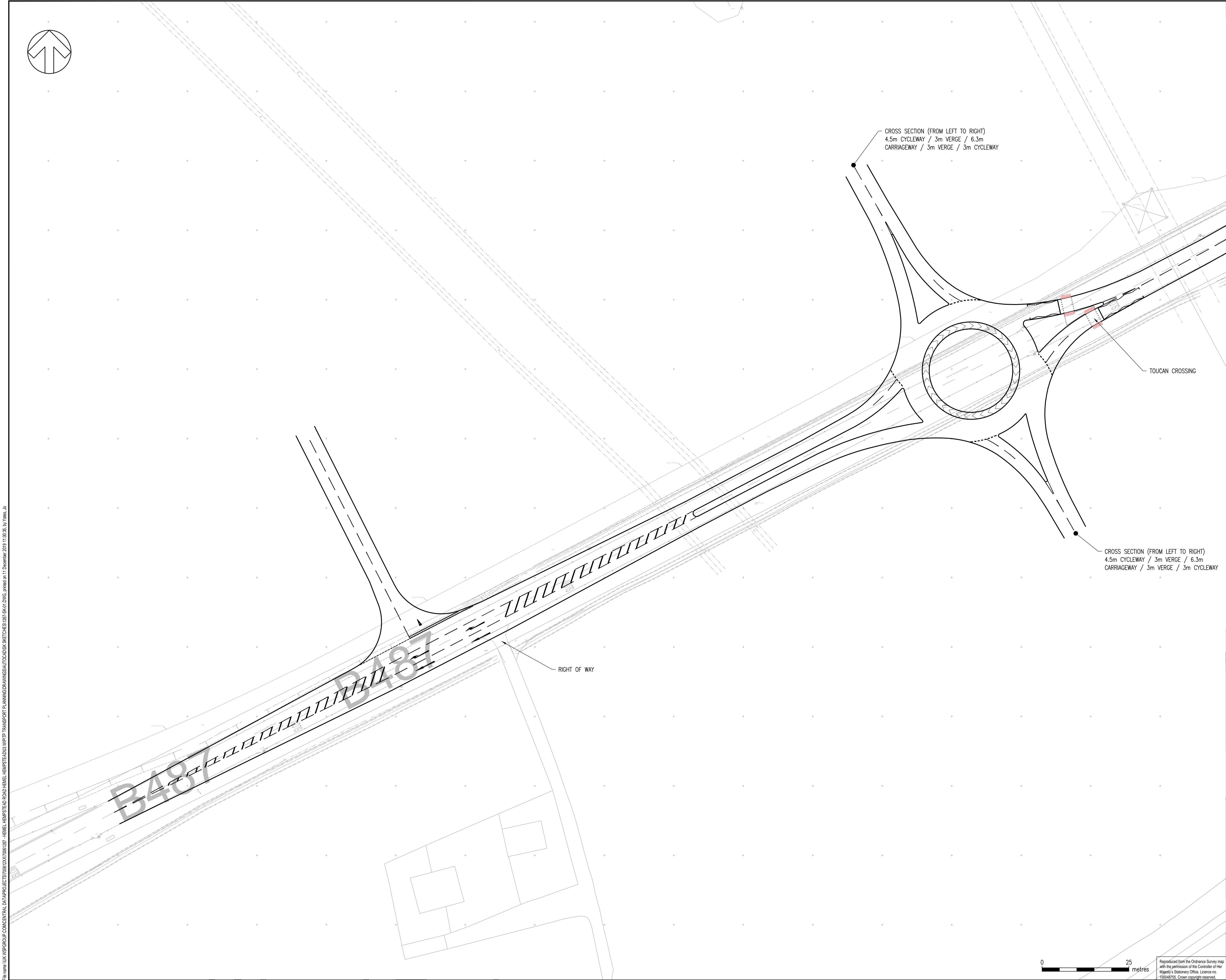
Site Access Strategy



Lawrence Walker Ltd Church Farm Leamington Hastings Warks CV23 8DZ	<div>Key</div> <div><div><div></div>Initial Infrastructure</div><div><div></div>Primary Infrastructure</div><div><div></div>Proposed Electric Mini-Bus Service (Extendable)</div><div><div></div>Existing Arriva Bus Route 2 (6 Buses per Hour)</div><div><div></div>Primary Cycle/Footway Links</div></div>	Project Land at North Hemel Hemel Hempstead				Title Site Access Strategy					
		Drn. SPJ		Chkd.	App.	Date 11/12/19	Drg. No.		CAD Ref	Plot	Rev
		Scales		NTS			Figure 1				P4

Appendix C

Site Access Proposals



DO NOT SCALE

P01	10/12/2019	JEY	FIRST ISSUE	JB	JB
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS:	EIP SUBMISSION
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Unit 9 The Chase, John Tate Road, Foxholes Business Park, Hertford, SG13 7NN, UK
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wsp.com

CLIENT:	PIGEON (HEMEL HEMPSTEAD) LTD
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ARCHITECT:	MOSAIC
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SITE/PROJECT:	HEMEL HEMPSTEAD ROAD, HEMEL HEMPSTEAD
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TITLE:	PRELIMINARY ACCESS PROPOSALS
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SCALE @ A1:	1:500	CHECKED:	JB	APPROVED:	JB
PROJECT NO:	70061267	DESIGNED:	ID	DRAWN:	JEY
				DATE:	December 19

DRAWING No:	1267-SK-01	REV:	P01
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File name: \\UK-WSP-GROUP-CONCENTRAL-DAT\PROJECTS\700612\X070061267-HEMEL HEMPSTEAD ROAD\HEMEL HEMPSTEAD\03 SKETCHES\1267-SK-01.DWG, printed on 11 December 2019 11:00:35, by Yana, Jo

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Appendix D

ATC Survey

B487 Hemel Hempstead ATC

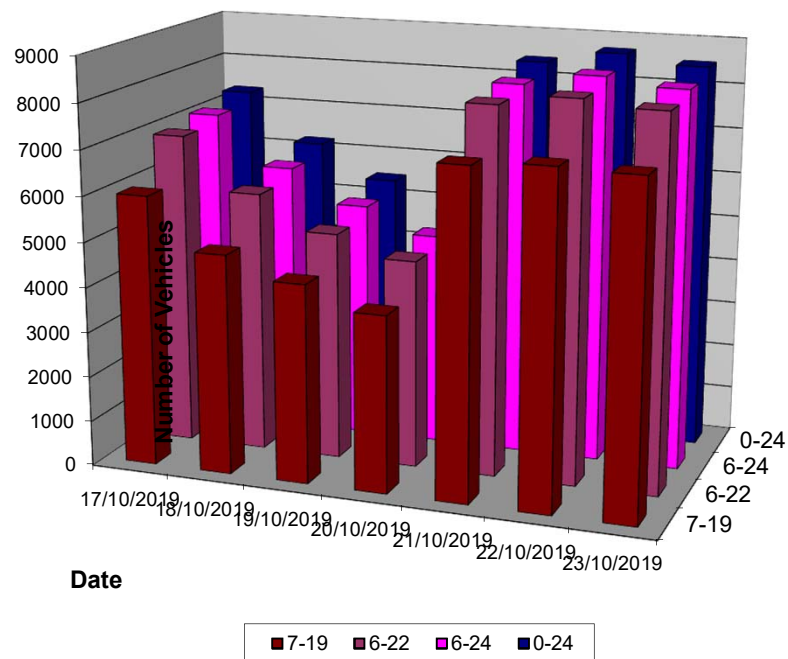
Channel 1 - Eastbound

Vehicle Flow

Week 1

Hr Ending	17-10-19 Thursday	18-10-19 Friday	19-10-19 Saturday	20-10-19 Sunday	21-10-19 Monday	22-10-19 Tuesday	23-10-19 Wednesday	5 Day Ave	7 Day Ave
1	20	26	59	55	15	27	20	22	32
2	24	25	36	37	15	14	11	18	23
3	5	8	20	23	9	12	7	8	12
4	22	18	17	21	19	16	15	18	18
5	36	37	37	23	46	38	35	38	36
6	117	106	45	25	96	103	104	105	85
7	315	308	108	60	324	368	346	332	261
8	558	554	201	101	943	980	975	802	616
9	445	444	288	136	776	823	797	657	530
10	376	382	333	274	484	497	459	440	401
11	348	348	373	359	374	355	375	360	362
12	376	360	356	407	719	408	704	513	476
13	335	347	527	404	534	451	539	441	448
14	353	403	575	377	433	454	445	418	434
15	497	401	423	378	443	518	439	460	443
16	536	403	350	345	525	555	509	506	460
17	716	501	329	292	724	798	763	700	589
18	836	370	323	268	738	894	732	714	594
19	617	351	315	559	487	554	508	503	484
20	308	285	252	362	289	344	307	307	307
21	195	188	155	174	179	167	179	182	177
22	134	141	139	107	118	160	111	133	130
23	87	120	120	60	92	108	103	102	99
24	66	94	99	57	41	65	37	61	66
7-19	5993	4864	4393	3900	7180	7287	7245	6514	5837
6-22	6945	5786	5047	4603	8090	8326	8188	7467	6712
6-24	7098	6000	5266	4720	8223	8499	8328	7630	6876
0-24	7322	6220	5480	4904	8423	8709	8520	7839	7083

Vehicle Flow (Channel 1)



B487 Hemel Hempstead ATC

Channel 1 - Eastbound

Average Speed

Week 1

Hr Ending	17-10-19 Thursday	18-10-19 Friday	19-10-19 Saturday	20-10-19 Sunday	21-10-19 Monday	22-10-19 Tuesday	23-10-19 Wednesday
1	50.5	51.2	52.6	50.7	50.3	50.1	47.8
2	49.0	49.6	48.9	51.0	46.8	46.6	46.4
3	54.0	53.3	47.2	48.0	50.8	55.5	51.9
4	52.0	51.2	48.0	47.5	52.9	50.7	51.7
5	50.8	50.1	48.8	51.9	51.2	50.4	51.0
6	49.3	49.4	50.4	52.7	50.0	52.8	53.0
7	46.1	46.2	50.9	51.3	47.5	47.9	47.0
8	44.4	44.6	50.0	52.4	41.4	43.2	41.4
9	42.4	42.6	50.5	49.7	44.1	45.4	43.9
10	46.4	46.1	48.0	49.6	46.2	48.0	46.3
11	48.5	48.4	47.9	49.2	47.3	48.4	46.9
12	47.7	48.0	48.5	47.8	46.1	48.1	46.1
13	47.2	47.5	47.3	48.4	47.4	47.0	47.4
14	45.8	47.7	48.5	50.0	48.9	47.9	48.9
15	46.5	48.9	48.3	48.8	48.2	47.7	48.1
16	46.8	48.8	49.5	49.1	47.9	47.7	47.7
17	47.2	45.0	50.3	50.1	46.4	46.5	46.0
18	45.3	44.4	49.3	50.2	46.8	45.7	46.8
19	45.5	44.6	48.3	46.3	45.8	45.5	45.7
20	47.5	48.1	47.8	47.1	47.2	47.6	46.8
21	48.9	48.3	48.5	48.8	50.2	47.4	50.7
22	49.3	49.9	48.1	49.7	50.9	49.3	50.5
23	47.8	47.4	47.6	51.8	51.1	50.0	50.9
24	50.7	48.3	47.8	51.4	51.2	49.1	50.5
10-12	48.1	48.2	48.2	48.5	46.5	48.2	46.3
14-16	46.6	48.9	48.8	48.9	48.0	47.7	47.9
0-24	46.4	46.7	48.7	48.9	46.4	46.7	46.3

Average 47.2

Channel 1 - Eastbound

85th Percentile

Hr Ending	17-10-19 Thursday	18-10-19 Friday	19-10-19 Saturday	20-10-19 Sunday	21-10-19 Monday	22-10-19 Tuesday	23-10-19 Wednesday
1	53.7	66.1	59.0	58.7	58.9	58.7	53.2
2	58.5	58.3	53.4	66.4	53.7	53.9	58.5
3	66.1	65.8	53.3	58.8	58.5	66.0	65.8
4	53.3	58.8	58.2	65.5	58.4	58.1	58.3
5	58.3	58.8	58.2	58.5	58.1	58.8	58.0
6	58.8	58.6	58.6	58.9	58.8	58.4	58.5
7	53.0	54.0	58.4	58.4	53.5	53.5	53.2
8	53.8	53.9	58.4	58.7	48.8	48.5	48.9
9	48.8	48.2	58.7	58.5	48.6	53.2	48.6
10	53.7	53.7	53.3	58.5	53.8	53.3	53.8
11	53.0	54.0	53.6	53.5	53.0	53.1	53.9
12	53.4	53.2	53.2	53.4	53.2	53.6	53.3
13	53.9	53.5	53.2	53.4	53.1	53.2	53.5
14	53.8	53.1	53.6	58.3	53.1	53.9	53.1
15	53.4	54.0	53.1	53.1	53.3	53.1	53.6
16	54.0	53.7	58.5	58.2	53.1	53.4	53.4
17	53.9	53.0	58.9	59.0	53.0	53.3	54.0
18	53.1	53.6	53.3	58.1	53.5	53.9	53.1
19	53.9	53.1	58.8	53.4	53.7	53.8	53.9
20	53.4	58.1	53.4	53.4	53.5	53.3	53.6
21	58.5	58.8	58.3	58.5	58.8	58.7	58.3
22	53.8	58.3	53.9	58.2	58.1	58.3	58.1
23	58.1	53.0	53.6	66.0	58.2	58.1	58.5
24	58.6	53.3	53.6	58.3	58.7	58.0	58.2
10-12	53.5	53.4	53.4	53.6	53.5	53.3	54.0
14-16	53.3	53.3	53.1	58.5	53.4	53.8	53.1
0-24	53.6	53.9	58.6	53.2	53.1	53.3	53.0

85th %ile 54.1

B487 Hemel Hempstead ATC

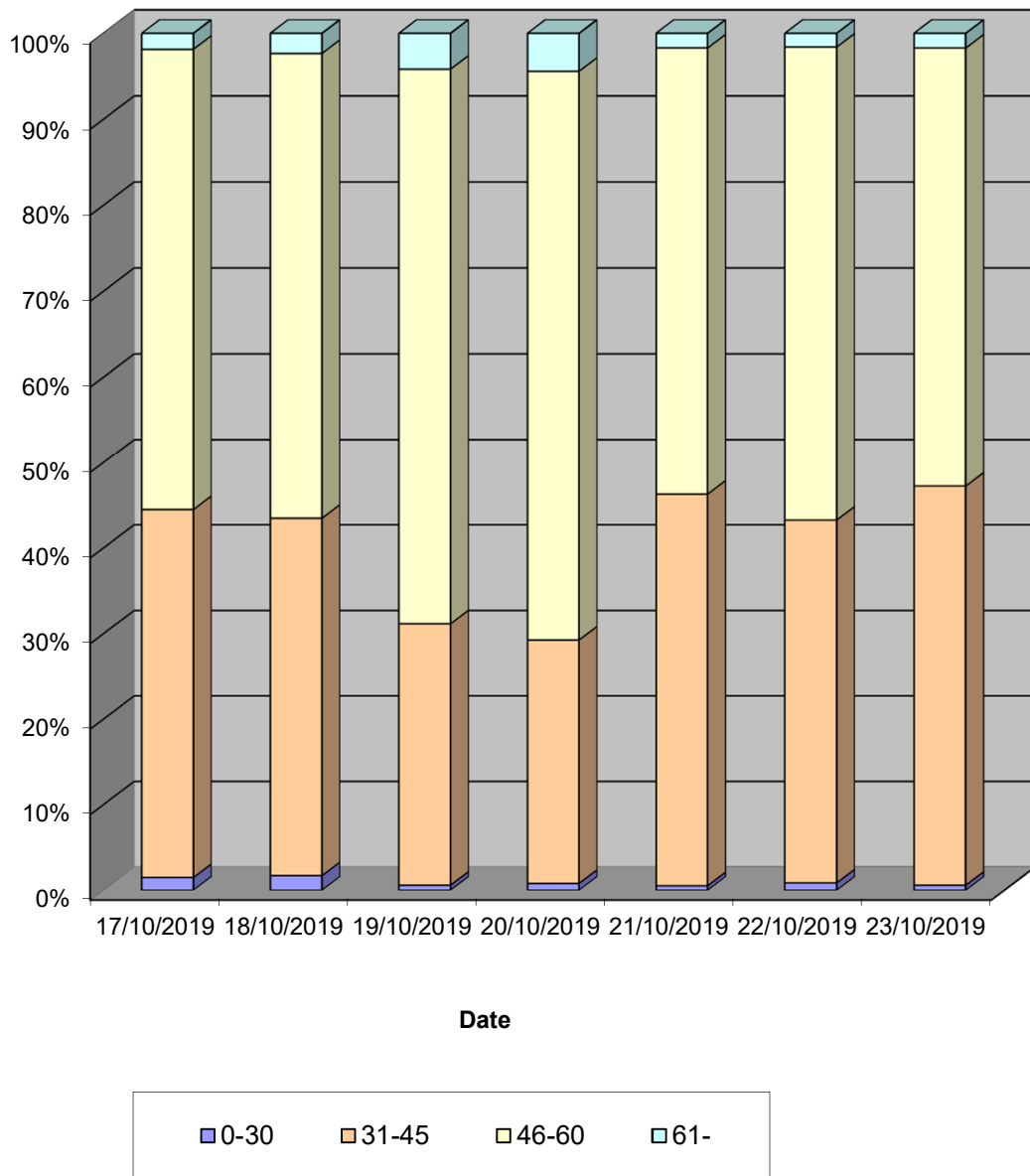
Channel 1 - Eastbound

Speed Summary

Week 1

Speed (MPH)	17-10-19 Thursday	18-10-19 Friday	19-10-19 Saturday	20-10-19 Sunday	21-10-19 Monday	22-10-19 Tuesday	23-10-19 Wednesday
0-30	108	106	32	39	44	74	49
31-45	3150	2599	1676	1397	3856	3695	3976
46-60	3929	3370	3544	3252	4380	4801	4350
61-	135	145	228	216	143	139	145
TOTAL	7322	6220	5480	4904	8423	8709	8520

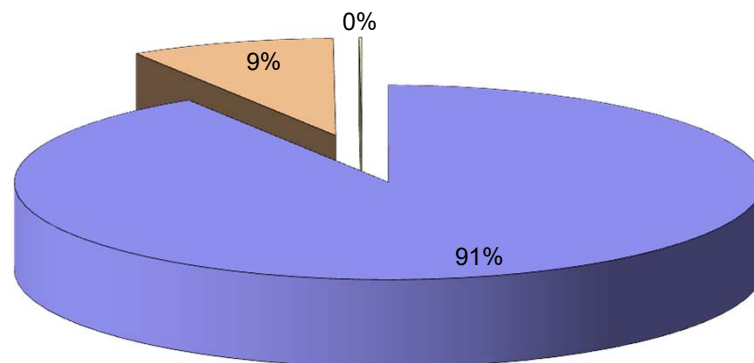
Speed Summary (MPH)



B487 Hemel Hempstead ATC

Channel 1 - Eastbound		Vehicle Class			Week 1
Classes Day / Time	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13	
17-10-19					
7-19	5421	564	8	5993	
6-22	6300	636	9	6945	
6-24	6440	649	9	7098	
0-24	6643	670	9	7322	
18-10-19					
7-19	4404	449	11	4864	
6-22	5239	535	12	5786	
6-24	5447	541	12	6000	
0-24	5643	565	12	6220	
19-10-19					
7-19	4084	301	8	4393	
6-22	4700	339	8	5047	
6-24	4913	345	8	5266	
0-24	5111	361	8	5480	
20-10-19					
7-19	3727	171	2	3900	
6-22	4389	212	2	4603	
6-24	4500	218	2	4720	
0-24	4678	224	2	4904	
21-10-19					
7-19	6415	757	8	7180	
6-22	7246	836	8	8090	
6-24	7370	845	8	8223	
0-24	7548	867	8	8423	
22-10-19					
7-19	6561	718	8	7287	
6-22	7523	795	8	8326	
6-24	7690	801	8	8499	
0-24	7877	824	8	8709	
23-10-19					
7-19	6459	778	8	7245	
6-22	7326	852	10	8188	
6-24	7456	862	10	8328	
0-24	7628	881	11	8520	
Average					
7-19	5296	534	8	5837	
6-22	6103	601	8	6712	
6-24	6259	609	8	6876	
0-24	6447	627	8	7083	

Total Vehicle Class Distribution



B487 Hemel Hempstead ATC

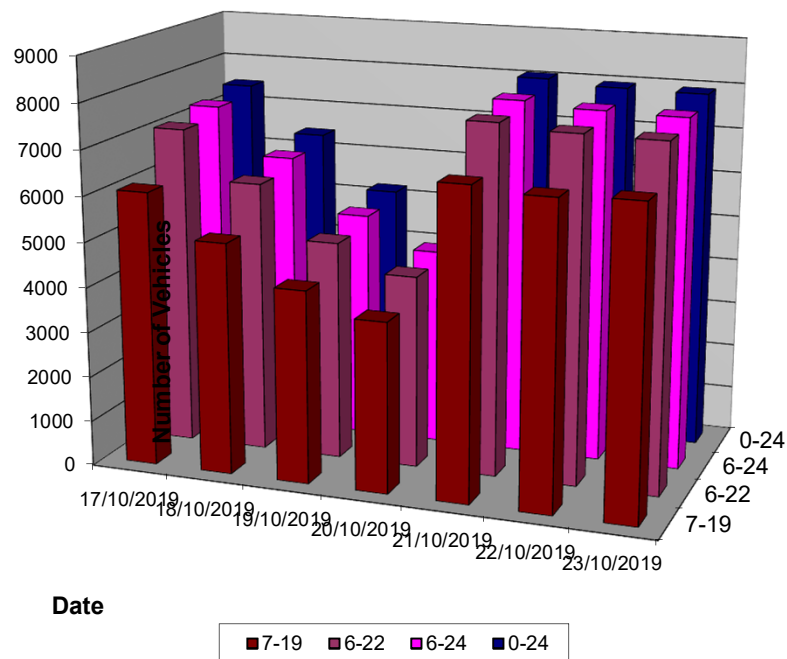
Channel 2 - Westbound

Vehicle Flow

Week 1

Hr Ending	17-10-19 Thursday	18-10-19 Friday	19-10-19 Saturday	20-10-19 Sunday	21-10-19 Monday	22-10-19 Tuesday	23-10-19 Wednesday	5 Day Ave	7 Day Ave
1	21	28	47	84	20	22	23	23	35
2	9	10	25	35	12	10	9	10	16
3	13	13	13	21	9	7	7	10	12
4	11	13	18	21	13	17	19	15	16
5	25	27	26	14	24	31	30	27	25
6	110	103	42	25	108	97	104	104	84
7	256	269	62	32	310	260	258	271	207
8	519	533	142	60	549	568	532	540	415
9	430	434	224	115	710	711	717	600	477
10	330	344	319	266	509	473	532	438	396
11	359	367	405	421	530	397	512	433	427
12	353	352	411	429	523	388	538	431	428
13	431	421	421	411	455	400	442	430	426
14	311	432	424	389	445	430	433	410	409
15	488	455	414	409	484	520	472	484	463
16	547	497	372	338	543	509	556	530	480
17	734	521	408	338	711	713	710	678	591
18	921	343	389	341	790	913	761	746	637
19	650	420	329	243	540	648	532	558	480
20	379	293	235	201	305	329	287	319	290
21	242	197	152	157	168	196	159	192	182
22	142	133	142	113	148	151	140	143	138
23	117	124	103	67	104	105	102	110	103
24	77	97	97	39	48	57	54	67	67
7-19	6073	5119	4258	3760	6789	6670	6737	6278	5629
6-22	7092	6011	4849	4263	7720	7606	7581	7202	6446
6-24	7286	6232	5049	4369	7872	7768	7737	7379	6616
0-24	7475	6426	5220	4569	8058	7952	7929	7568	6804

Vehicle Flow (Channel 2)



B487 Hemel Hempstead ATC

Channel 2 - Westbound

Average Speed

Week 1

Hr Ending	17-10-19 Thursday	18-10-19 Friday	19-10-19 Saturday	20-10-19 Sunday	21-10-19 Monday	22-10-19 Tuesday	23-10-19 Wednesday
1	49.0	49.0	50.0	49.6	47.5	48.7	49.4
2	45.8	48.8	50.4	49.5	45.9	50.8	48.0
3	45.1	44.7	48.0	49.1	52.7	54.1	50.9
4	54.8	56.7	52.6	54.2	47.2	51.5	53.3
5	53.3	53.4	48.8	49.2	53.3	51.3	54.5
6	46.8	46.4	50.1	49.1	47.6	49.7	49.9
7	44.2	43.8	53.1	52.0	43.1	46.5	43.5
8	41.3	41.0	49.5	50.6	38.6	42.4	38.6
9	13.6	13.9	49.2	52.0	41.1	44.1	41.0
10	32.4	33.0	47.6	49.2	43.2	45.4	43.3
11	45.3	45.6	46.7	46.5	44.3	44.7	44.3
12	47.0	47.0	47.6	47.0	43.7	46.0	43.5
13	44.0	44.3	46.8	46.3	44.9	46.1	44.8
14	43.7	46.6	45.1	47.3	45.3	46.2	45.2
15	46.6	47.8	45.8	46.6	45.5	45.9	45.3
16	45.3	47.2	47.1	47.8	44.4	46.3	44.6
17	42.5	25.4	47.7	47.5	43.7	43.2	43.7
18	41.8	16.2	44.9	46.8	43.2	39.6	43.1
19	41.7	27.0	46.9	45.8	41.2	41.9	41.0
20	44.4	45.8	45.9	47.1	45.2	44.7	45.2
21	47.4	46.8	47.7	47.8	48.4	47.9	48.5
22	49.2	46.7	49.2	48.5	49.0	48.0	48.8
23	49.0	47.3	48.8	49.3	50.0	48.8	49.2
24	50.9	48.7	47.9	50.1	51.6	49.4	53.5

10-12	46.1	46.3	47.2	46.7	44.0	45.3	43.9
14-16	45.9	47.5	46.4	47.1	45.0	46.1	44.9
0-24	41.9	38.5	47.1	47.5	43.7	44.4	43.7

Average	43.8
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Channel 2 - Westbound

85th Percentile

Hr Ending	17-10-19 Thursday	18-10-19 Friday	19-10-19 Saturday	20-10-19 Sunday	21-10-19 Monday	22-10-19 Tuesday	23-10-19 Wednesday
1	53.3	58.3	53.7	58.6	53.2	58.6	53.8
2	53.5	58.3	58.5	58.3	53.2	53.8	58.3
3	48.9	48.2	58.6	58.1	58.3	66.0	58.7
4	66.0	66.0	65.7	65.7	58.8	58.2	65.9
5	65.9	65.7	58.5	58.1	65.6	66.4	66.3
6	53.8	53.6	66.2	58.4	53.5	58.4	58.7
7	48.8	48.4	66.3	59.0	48.8	53.3	53.4
8	48.7	48.9	58.4	58.5	48.8	48.8	48.1
9	16.2	16.0	53.9	58.5	48.3	48.2	48.4
10	54.0	53.2	53.7	54.0	49.0	48.4	48.3
11	53.3	53.7	53.1	53.2	48.8	53.2	53.7
12	53.5	53.7	53.6	53.4	48.7	53.9	48.3
13	53.4	53.6	53.7	53.4	48.9	53.6	53.8
14	48.7	53.8	53.0	53.3	53.9	53.4	53.2
15	53.2	53.2	53.4	53.5	53.4	53.4	53.6
16	53.4	53.8	53.4	53.1	48.1	53.9	49.0
17	48.5	43.2	53.3	53.5	49.0	48.6	48.2
18	48.8	26.5	54.0	54.0	48.8	48.9	48.9
19	48.5	43.1	53.8	53.6	48.7	48.5	48.1
20	53.4	53.1	53.7	53.9	53.4	53.3	54.0
21	53.5	53.8	53.4	53.7	53.0	53.9	53.6
22	58.2	53.4	58.7	53.4	53.2	58.3	53.6
23	58.6	53.5	58.3	58.7	58.2	58.3	58.9
24	58.5	58.1	53.4	58.1	66.0	58.2	66.1

10-12	53.7	53.1	53.4	53.8	48.4	53.3	48.2
14-16	53.9	53.2	53.9	53.7	48.1	53.0	48.9
0-24	53.4	53.0	53.1	53.5	48.3	53.7	48.1

85th %ile	51.9
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B487 Hemel Hempstead ATC

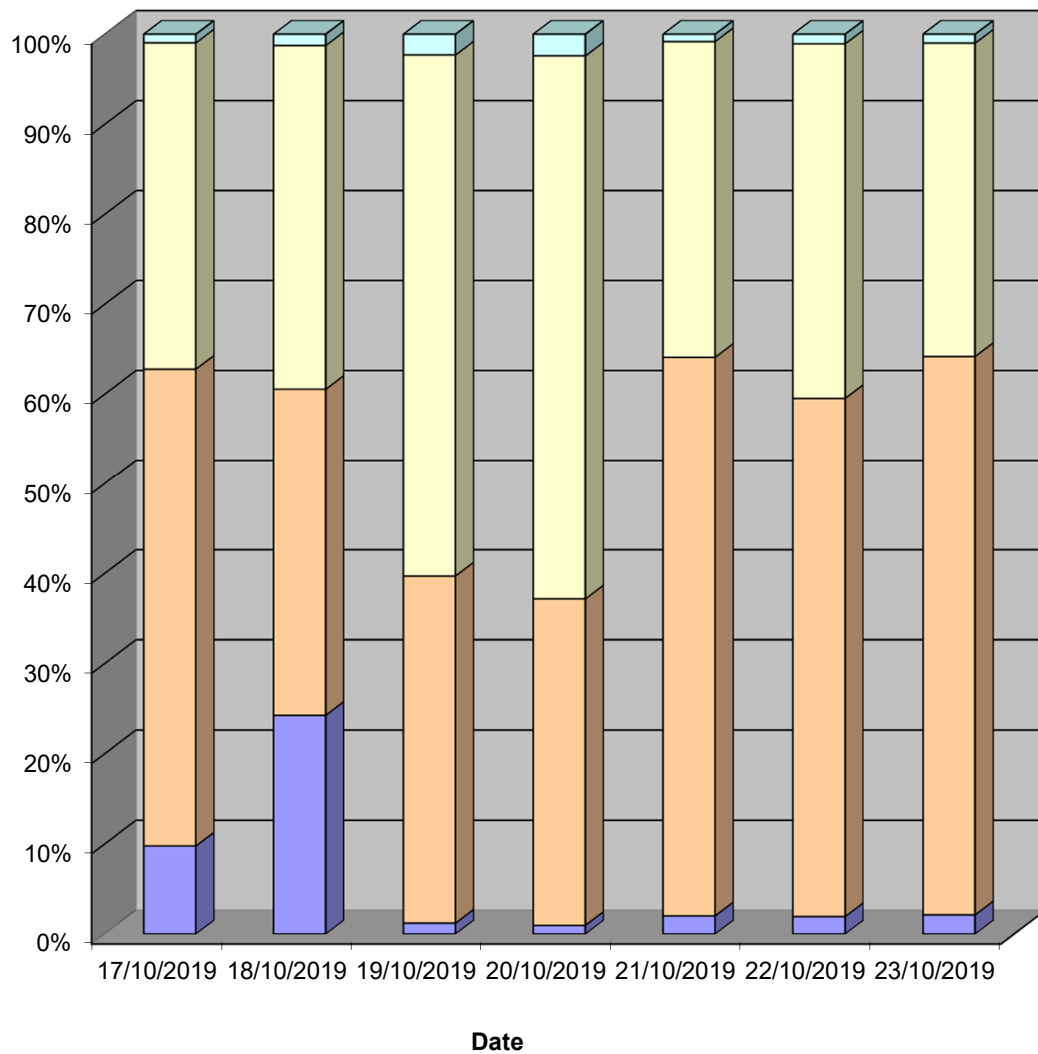
Channel 2 - Westbound

Speed Summary

Week 1

Speed (MPH)	17-10-19 Thursday	18-10-19 Friday	19-10-19 Saturday	20-10-19 Sunday	21-10-19 Monday	22-10-19 Tuesday	23-10-19 Wednesday
0-30	729	1558	63	44	163	154	169
31-45	3963	2332	2009	1653	5002	4579	4920
46-60	2711	2455	3028	2762	2828	3134	2762
61-	72	81	120	110	65	85	78
TOTAL	7475	6426	5220	4569	8058	7952	7929

Speed Summary (MPH)



0-30 31-45 46-60 61-

B487 Hemel Hempstead ATC

Channel 2 - Westbound		Vehicle Class			Week 1
Classes Day / Time	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13	
17-10-19					
7-19	5504	550	19	6073	
6-22	6447	625	20	7092	
6-24	6634	632	20	7286	
0-24	6800	655	20	7475	
18-10-19					
7-19	4617	485	17	5119	
6-22	5438	556	17	6011	
6-24	5654	561	17	6232	
0-24	5828	581	17	6426	
19-10-19					
7-19	3965	280	13	4258	
6-22	4519	317	13	4849	
6-24	4710	326	13	5049	
0-24	4869	338	13	5220	
20-10-19					
7-19	3570	185	5	3760	
6-22	4050	208	5	4263	
6-24	4154	210	5	4369	
0-24	4344	220	5	4569	
21-10-19					
7-19	6075	695	19	6789	
6-22	6929	770	21	7720	
6-24	7076	775	21	7872	
0-24	7242	795	21	8058	
22-10-19					
7-19	6036	615	19	6670	
6-22	6916	671	19	7606	
6-24	7071	678	19	7768	
0-24	7230	703	19	7952	
23-10-19					
7-19	6029	688	20	6737	
6-22	6811	746	24	7581	
6-24	6961	752	24	7737	
0-24	7135	770	24	7929	
Average					
7-19	5114	500	16	5629	
6-22	5873	556	17	6446	
6-24	6037	562	17	6616	
0-24	6207	580	17	6804	

Total Vehicle Class Distribution

