Land off Bullens Green Lane, Colney Heath, St Albans

Transport Assessment

August 2020

Woods Hardwick

Architecture | Engineering | Planning | Surveying

Page Deliberately Blank.

Contents

Appendices

Appendix A	Site Location Plan
Appendix B	Site Layout Plan
Appendix C	Pre-Application Response from Hertfordshire County Council
Appendix D	Site Access Drawing
Appendix E	Public Transport Information
Appendix F	CrashMap Extract
Appendix G	TRICS Output

Report Reference

18770/TA

Revision History

Rev	Amendments	Prepared By	Checked By	Date
First Issue	N/A	JK	GBR	24/08/2020

Page Deliberately Blank.

Introduction

Woods Hardwick

Architecture | Engineering | Planning | Surveying

Page Deliberately Blank.

Introduction

The following paragraphs state the purpose of this document, and its constraints. A summary of existing and future site details; together with relevant pre-planning correspondence is also provided.

1.1 This Transport Assessment (TA) has been prepared by Woods Hardwick Infrastructure LLP on behalf of Canton Ltd in support of an Outline Planning Application for the proposed residential development on a site known as 'Land off Bullens Green Lane, Colney Heath, St Albans'. A Site Location Plan is included in **Appendix A**.

1.2 The proposed development is for the construction of up to 100 residential dwellings comprising a mix of detached, semi-detached and terraced properties. The development proposals also include associated parking, landscaping and open space. A Site Layout Plan is included in **Appendix B**.

1.3 In terms of highways and transport, the development lies under the responsibility of Hertfordshire County Council (HCC), who represent the Local Highway Authority (LHA) for the area.

1.4 The purpose of this TA is to gauge the potential impact of the proposed development on the surrounding highway network. The document is written in accordance with the Department for Communities and Local Government's (DCLG) Planning Practice Guidance and other relevant planning policy at both the national and local level.

1.5 This report addresses the potential transportation and highways issues raised by the development proposals and concludes that the site lies in a sustainable location that can be accessed by alternatives to single occupancy vehicle (SOV) journeys.

1.6 A pre-application enquiry was submitted and a meeting was held between Woods Hardwick and Hertfordshire County Council in which junction assessments were agreed at the following locations:

- Site Access / Fellowes Lane
- Fellowes Lane / Tollgate Road

1.7 The location of the site access has since been moved and is now proposed to be situated off Bullen's Green Lane to the east of the site. confirmation is currently awaited from HCC to determine whether the offsite junctions to be modelled require updating.

1.8 As a result of the pre-application meeting, a speed survey and Stage 1 Road Safety Audit (RSA) were requested to be undertaken.

1.9 The pre-application meeting also agreed in principle that an addendum report will be submitted to include the findings of the junction capacity assessments. A full copy of the pre-application response can be found in **Appendix C.**

1.10 This report concludes that, subject to the outcome of the above, there is no reason in terms of highways and transport why the proposed development should not be fully supported through the planning process.

Existing Site and Proposed Development

Woods Hardwick

Architecture | Engineering | Planning | Surveying

Page Deliberately Blank.

Existing Site and Proposed Development

The following paragraphs provide details on the existing and proposed future residential development site; in relation to location, land uses and accessibility by sustainable modes of travel.

2.1 Colney Heath is a large village located within the southern extents of Hertfordshire. It is located approximately 7.5km to the south west of Hatfield, 14km to the east of St Albans and 13km to the south of Welwyn Garden City.

2.2 By road Colney Heath is accessible from all directions. The A1(M) runs from north to south to the east of the site, facilitating access to Welwyn Garden City and Stevenage to the north, and South Mimms to the south. The A414 / N Orbital is located to the north of the site, and facilitates access to St Albans to the west, in addition to linking to the M1. The aforementioned roads represent major road arteries forming part of the Strategic Road Network (SRN); currently maintained by Highways England.

2.3 The existing site constitutes approximately 5.12ha of arable land and bordering hedgerows. To the north west, the site is bordered by existing residential dwellings fronting Roestock Lane; and to the north east by dwellings fronting Roestock Gardens. To the west, the site is bordered by Roestock Park; to the east by Bullen's Green Lane and to the south by Fellowes Lane.

2.4 The proposed development is for the construction of up to 100 residential dwellings with associated parking and open space. The illustrative development proposals include both houses and flats, with a mix of detached, semi-detached and terraced properties.

2.5 The development will be accessed via one point of vehicular entry post construction, which will take the form of a priority T-junction off Bullen's Green Lane. At present, the carriageway for this has been designed to be 5.5m wide with 2m footpaths either side. The Bullen's Green Lane carriageway is also to be widened to provide 5.5m width.

2.6 The section of Bullen's Green Lane, from which the site access is to be taken, does not currently benefit from the provision of a footpath or street lighting. However, a footpath on the development side of the carriageway, with the provision of street lighting, is accessible on the section of Bullen's Green Lane immediately to the north of the site; it is proposed that the development proposals for the site access tie into this existing provision. The access works also include a commitment to formalizing the existing parking infrastructure on Bullen's Green Lane. For more details, please refer to the Site Access Drawing included in **Appendix D**.

2.7 A speed survey will be undertaken to determine the suitability of the proposed reduction in speed limit; the outcome of this will determine whether the vision splays are provided in accordance with Manual for Streets (MfS) or the Design Manual for Roads and Bridges (DMRB).

2.8 There are a number of Public Right's of Way (PRoW) within the site boundary and within the immediate vicinity of the site. Footpath (FP) 067 and 048 cross the northern half of the site, whilst FP 023 runs along the north western border of the site between Roestock Lane and Roestock Park. FP 067 facilitates access east into Hatfield, and FP 023 facilitates access into the wider areas of Colney Heath.

2.9 The development proposals plan to retain the PRoW's within the site, in addition to providing new footpaths along either side of the access road within the site. It is also important to note that the client is negotiating with the land owner of the recreation ground, St Albans Council, in relation to providing a footpath link through the park grounds.

Transportation Policy

Woods Hardwick

Architecture | Engineering | Planning | Surveying

Page Deliberately Blank.

Transportation Policy

The following paragraphs provide details on the transport related planning policies that help define the scope of requirements that should be adhered to when considering development at the proposed site.

3.1 This TA considers the guidance set out in the DfT document 'Guidance on Transport Assessment' published in March 2007, as well as the relevant sections of the Department for Communities and Local Government's more recent guidance contained within the Planning Practice Guidance. In accordance with this guidance a review of relevant transportation policy at a national, regional and local level is included within the following paragraphs.

National Guidance

3.2 Within the 'Travel Plans, Transport Assessments and Statements' section of the DCLG, PPG; the definition of a Transport Assessment is as follows:

'Transport Assessments… are ways of assessing the potential transport impacts of development (and they may propose mitigation measures to promote sustainable development. Where that mitigation relates to matters that can be addressed by management measures, the mitigation may inform the preparation of Travel Plans)'

3.3 The **National Planning Policy Framework (NPPF: February 2019)** aims to bring about sustainable development and create positive growth, to create economic, environmental and social progress for this and future generations. This revised document supersedes the previous NPPF, published in 2012 and 2018.

3.4 Section 9 of the NPPF focuses on promoting sustainable transport. NPPF Paragraph 111 states that all applications for developments that will generate significant amounts of movement should be supported by a Transport Statement and Transport Assessment.

3.5 NPPF Paragraph 108 states that in assessing sites that may be allocated for development plans, or specific applications for development, it should be ensured that:

- *'Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;*
- *Safe and suitable access to the site can be achieved for all users; and*
- *Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.'*

3.6 NPPF Paragraph 103 states that significant development should be focused on locations which are, or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes.

3.7 NPPF Paragraph 110 states that developments should be located and designed to:

- Give priority first to pedestrian and cycle movements, both within the scheme and within neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;
- Address the needs of people with disabilities and reduced mobility in relation to all modes of transport;
- Create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;
- Allow for the efficient delivery of goods, and access by service and emergency vehicles; and
- Where possible, be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

3.8 NPPF Paragraph 109 states that developments should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impact on the road network would be severe.

3.9 The requirement for developers (in partnership with local authorities) to submit plans for the implementation and maintenance of measures that will minimise the traffic generated by their development and that encourage walking and cycling is also outlined in the Department for Transport Circular 02/13.

3.10 **Manual for Streets (MfS) (March 2007)** recognises the significance of the design of a development in encouraging sustainable modes of transport as paragraph 2.2.5 of MfS states that:

'attractive and well connected permeable street networks encourage more people to walk and cycle to local destinations, improving health while reducing motor traffic, energy use and pollution.'

3.11 Walking is widely considered to be the most important mode of travel at the local level and offers the greatest potential to replace short car trips, particularly for journeys of less than 2km. It is also important to provide sustainable routes for journeys of greater distances through the provision of a high quality, safe, secure and reliable network of routes, with good interchanges, which match the pattern of travel demand in order to maximise public transport patronage.

3.12 The 'Road User Hierarchy' as described in Department for Transport publications MfS and 'Building Sustainable Transport into New Developments' (2008), also puts forward walking and cycling as the two preferred modes of travel, followed by public transport, specialist service vehicles and lastly other motor traffic. It is recommended that where possible a scheme should follow this proposed hierarchy.

3.13 As advised in MfS and summarised in Manual for Streets 2 (MfS2) (September 2010) Paragraph 5.1.3; encouraging walking has many benefits, including reductions in vehicle emissions and traffic collisions, and improvements in personal health. In summary the documents advise that:

- The propensity to walk is influenced not only by distance, but also by the quality of the walking experience.
- Good sightlines and visibility towards destinations and intermediate points are important for way finding and personal security.
- Pedestrian routes need to be direct and match desire lines as closely as possible, including across junctions, unless site specific reasons preclude it.
- Pedestrian networks need to be connected. Where routes are separated by heavily-trafficked routes, appropriate surface-level crossings should be provided where practicable.
- Pedestrians should generally be accommodated on multifunctional streets rather than routes segregated from other motor traffic. In situations where it is appropriate to provide traffic-free routes they should be short, well-overlooked and relatively wide.

- Obstructions on the footway should be minimised. Street furniture on footways can be a hazard for vulnerable people.
- There is no maximum width for footways; widths should take account of pedestrian volumes and composition.

3.14 As with walking, MfS and MfS2 advise that cycling can bring about benefits in terms of vehicular emissions, traffic collisions and public health. To summarise, MfS2 Paragraph 6.1.3 states that:

- Cyclists should be accommodated on the carriageway.
- Cyclists prefer direct, barrier free routes that avoid the need to dismount. Routes that take cyclists away from their desire lines and require them to concede priority to side road traffic are less likely to be used.
- Off-carriageway cycle tracks that bring cyclists into conflict with side road traffic can be more hazardous than routes that stay on the main carriageway.
- Cyclists are sensitive to traffic conditions; high speeds or high volumes of traffic tend to discourage cycling. If traffic conditions are inappropriate for on-street cycling, they should be addressed to make on-street cycling satisfactory.
- Junctions should be designed to accommodate cyclist's needs. Over-generous corner radii that lead to high traffic speeds should be avoided.

3.15 In September 2015 Highways England released **'The Strategic road network Planning for the future'.** The guidance states that the overall forecast demand on the Strategic Road Network and surrounding local road network should be assessed and compared to the ability of the existing network to accommodate traffic.

Local Guidance

3.16 Transport Policy at the local level is set out in Hertfordshire County Council's 4th Local Transport Plan (LTP4), which covers the years 2018 – 2031. LTP4 sets out the Authority's aspirations for improving the travel in the county.

3.17 The LTP4 has nine primary objectives relating to Prosperity, Place and People, as outlined below:

	Objective
Prosperity	1. Improve access to international gateways and regional centres outside Hertfordshire
	2. Enhance connectivity between urban centres in Hertfordshire
	3. Improve accessibility between employers and their labour markets
	4. Enhance journey reliability and network resilience across Hertfordshire
Place	5. Enhance the quality and vitality of town centres
	6. Reserve the character and quality of the Hertfordshire environment
	7. Reduce carbon emissions
People	8. Make journeys and their impact safer and healthier
	9. Improve access and enable participation in everyday life through transport

3.18 HCC also have twenty-three policies to be adhered to when working towards achieving the aforementioned objectives; these policies are briefly outlined below:

Policy Title	Outline
1. Transport User Hierarchy	Supporting the creation of built environments that encourage greater and safer use of sustainable transport; reducing travel demand; and considering vulnerable road users.
2. Influencing Land Use Planning	Encouraging the location of new developments in areas served by, or with the potential to be served by high quality public transport facilities.
3. Travel Plans and Behaviour Change	Encouraging the adoption of travel plans through working in partnership with employers and businesses; integrating travel plans into the planning process for new developments; and supporting school travel plans.
4. Demand Management	Employing greater traffic demand management in urban areas via parking restrictions and introducing charging on-street and off-street parking areas.
5. Development Management	Reduce travel demand; provide safe access arrangements; adopt access roads; employ developer mitigation methods and resist development where resultant impact is severe or where the character of the area would be compromised; require a Travel Plan in accordance with HCC's Travel Plan Guidance; and ensure new parking facilitates electric vehicles.
6. Accessibility	Increase accessibility to key services, particularly for disadvantaged groups by working in partnership with transport operators; address the barriers to accessibility; promote travel options via information provision; and improve travel choices and options to support shared mobility initiatives.
7. Active Travel – Walking	Promote walking by prioritizing pedestrians; delivering infrastructure to make pedestrian travel safer; promoting walking and key networks of pedestrian priority routes; and supporting the implementation of the Public Rights of Way Improvement Plan.
8. Active Travel – Cycling	Infrastructure improvement; increasing priority and safety of cycling movement; promotion campaigns for education (e.g. Bikeability); and facilitating provision of secure cycle parking.
9. Buses	Minimising bus service disruption; maintaining high quality bus stops; working with partners to improve interchanges and multi-modal travel; and promoting bus services as an option for school and work journeys.
10. Rail	Promotion of rail use by improving services in regards to capacity, journey times, frequency and destinations; and making rail travel more attractive by improving ticketing and station facilities.

11. Airports	Promotion and facilitation of a modal shift of airport passengers and employees towards sustainable modes.
12. Network Management	Reduce traffic congestion and prioritise strategic routes by the use of intelligent transport systems; encouraging walking / cycling; sharing data for all network users and controlling on-street parking.
13. New Roads and Junctions	Working with Highways England and major scheme developers to design new transport infrastructure, to better manage existing and future demand on the road network.
14. Climate Change Network Resilience	Designing, constructing, maintaining and operating infrastructure in light of risk of a changing climate.
15. Speed Management	Employing the Speed Management Strategy in partnership with the Police, to achieve appropriate speeds and increase safety for all road users.
16. Freight and Logistics	Encouraging HGVs to use the primary network route; encouraging rail / water / pipeline transport; monitoring changes in HGV / LGV activity; and supporting HGV facility improvement (e.g. overnight parking).
17. Road Safety	Working towards zero fatalities and serious injuries by delivering effective and appropriate road safety measures; developing 'Safe Systems' that increase the safety of roads and vehicle speeds; and better data analysis.
18. Transport Safety and Security	Improve the perception of safety and security by ensuring that the transport system is resilient and prepared for instances of major alert.
19. Emissions Reduction	Reduce levels of harmful emissions by promoting change in travel behaviour and addressing barriers to and supporting the uptake of ultra-low emission vehicles (ULEVs).
20. Air Quality	Reducing the impact of poor air quality by investigating the use of Clean Air Zones; assessing air pollution levels within district / borough councils; and implementing the Air Quality Strategic Plan.
21. Environment	Minimise the impact of traffic on the natural, built and historic environment; protect and enhance the quality of public spaces; and minimise visual intrusions, light and noise pollution.
22. Asset Management	Employ the Highway Infrastructure Asset Management Plan; maximise opportunity for investment and seek value for money for all assets.
23. Growth and Transport Plans	Produce Growth and Transport Plans covering sub area of Hertfordshire to identify relevant interventions aligned with the LTP objectives.

Parking Standards

3.19 Parking for residents and their visitors will be provided onsite in full accordance with the guidance contained within St Albans City & District Local Plan 2020-2036 Publication Draft 2018 and the Welwyn Hatfield District Plan Review Supplementary Planning Guidance Parking Standards Adopted January 2004.

Table 3.1: St Albans Residential Parking Standards

Use Class	Car Parking Standards	Cycle Standards
C3 – Residential	1 bedroom dwellings (including studios): 1.5 spaces (either 1.5 unallocated, or 1 allocated and 0.5 unallocated) 2 bedroom dwellings: either 2 spaces (either 2 unallocated or 1 allocated and 1 unallocated) or 2.5 spaces (2 allocated and 0.5 unallocated) 3 bedroom dwellings: 2.5 spaces (2 allocated and 0.5 unallocated) 4 bedroom dwellings: 3.5 spaces (3 allocated and 0.5 unallocated)	1 l/t space per unit if no garage or shed provided. 1 s/t space per 3 units plus 1 l/t space per 5 units

Table 3.2: Welwyn Hatfield Residential Parking Standards

Use Class	Description of Development	Maximum Car Parking Standards		Cycle Parking Standards
C3 Residential	a) General needs	Zones 1 and 2	Elsewhere	1 l/t space per unit if no garage or shed provided
	i) bedsits	0.75 spaces per bedsit	1.25 spaces per bedsit	
	ii) 1 bedroom dwellings	0.75 spaces per dwelling	1.25 spaces per dwelling	
	iii) 2 bedroom dwellings	1 space per dwellings	1.5 spacer per dwelling	
	iv) 3 bedroom dwellings	1.5 spaces per dwelling	2.25 spaces per dwelling	
	v) 4 bedroom dwellings	2.0 spaces per dwelling	3 spaces per dwelling	

3.20 The parking standards for residential use for vehicles, based on St Albans and Welwyn Hatfield Parking Standards are shown in Table 3.1 and Table 3.2 respectively; the more onerous standards will be adhered to. The exact number of spaces to be provided within the development proposals can be viewed on the Site Layout Plan included in **Appendix B**.

Page Deliberately Blank.

Sustainability Appraisal

Woods Hardwick

Architecture | Engineering | Planning | Surveying

Page Deliberately Blank.

Sustainability Appraisal

The following paragraphs consider existing travel conditions in the vicinity of the site, focusing on the opportunities that exist for sustainable travel such as walking, cycling and public transport.

4.1 A summary of the sustainable travel options available for residents of and visitors to the site is provided below. A Green Travel Plan (GTP) has been prepared for the development and submitted as part of the outline planning application, which provides a detailed assessment of the existing sustainable alternatives to the private car that are prevalent to the site. The GTP proposes measures to assist in achieving the modal shift target set in the GTP.

4.2 As detailed in the GTP, a Travel Plan Coordinator will be appointed to oversee the management and monitoring of the Plan to ensure that all available options are capitalised upon, thereby ensuring that the site is as sustainable as possible.

Pedestrians

Existing Pedestrian Infrastructure

4.3 Based on the Chartered Institute of Highways and Transportation (CIHT) publication 'Providing Journeys on Foot'; the preferred maximum walking distance for the purposes of commuting / school journeys / sight-seeing is 2km. All of Colney Heath is accessible within 2km of the proposed development site.

4.4 Within Colney Heath, cars, cyclists and pedestrians are generally able to follow the same routes, which are easily navigable towards the centre of the village. This feature is of great benefit to pedestrians who benefit from the legible design of roads within an area. This is in line with the recommendations detailed in Manual for Streets for pedestrians. It is proposed that these provisions will be continued within the site.

4.5 There are a number of Public Right of Way's (PRoW) within the site boundary and surrounding areas. Footpath (FP) 067 and 048 cross the northern half of the site, whilst FP 023 runs along the north western border of the site between Roestock Lane and Roestock Park. FP 067 facilitates access east into Hatfield via the pedestrian bypass under the A1(M), and FP 023 facilitates access into the wider areas of Colney Heath.

4.6 A number of services and facilities will be available to residents and visitors of the site within a comfortable walking distance. The majority of Colney Heath lies within a 2km walking distance, in addition to the south western extents of South Hatfield. As previously mentioned, the client is currently negotiating with the land owner (St Albans Council) to provide a second footpath link through the recreation area close to the south western corner of the site, which would provide a more direct and quicker access route to some of the surrounding services and facilities.

4.7 The closest bus stops to the site is ‘Hall Gardens’ located approximately 400m from the site on Hall Gardens Road, equating to a short 5-minute walk.

Existing Pedestrian Behaviour

4.8 2011 Census data shows that 6.1% of the residents that regularly commute to work as recorded for the 2011 Parish of ‘Colney Heath: E04004802’; do so by foot. This is less than the national average of 10.9%.

4.9 Census data from 2011 also shows that 10.5% of ‘Colney Heath: E04004802’ commuters live within 2km of their place of work. This suggests that over half of the residents who could reasonably be expected to walk to work, already do so.

4.10 As noted above, a distance of 2km is considered to be the preferred maximum walking distance for commuting purposes. Given that the average walking speed for an adult is circa 3mph (4.8kph), it is expected that the average adult would take between 25 and 30 minutes to walk a distance of 2km. A list of destinations considered to be accessible within a 30-minute walking journey from the development site, together with corresponding journey distances and times are presented in Table 4.1. A walking isochrone map showing the extent of all possible journeys up to 30 minutes from the proposed site access are shown in Figure 4.1.

Table 4.1: Destinations Accessible within a 30-minute Walk from the Development Site

Destination	Journey Distance and Time
Roestock Park, Colney Heath Scout Hut, River Colne, The Rice (Indian Takeaway), Colney Heath News Convenience Store, St Marks Church, St Marks Church Centre, Treasure Tots Preschool, The Crooked Billet Pub, Colney Heath Village Hall, Colney Heath Parish Council, Colney Heath Post Office, The Warren Park and Garden, Red Hall Wood.	Up to 1.5km Accessible within 20 minutes
Colney Heath Football Club, Colney Heath Local Nature Reserve, Northdown Road Surgery, South Hatfield Post Office, University of Hertfordshire Campus, The Hive @ The Jim McDonald Centre (Community Centre).	1.6km to 2.5km Accessible within 30 minutes

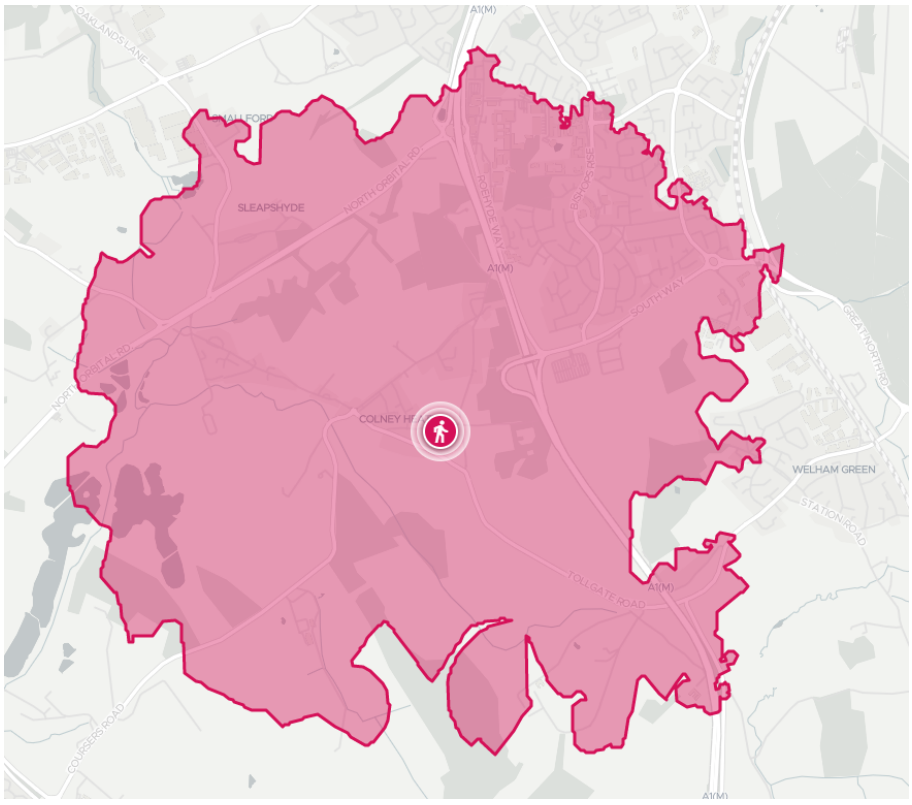


Figure 4.1: Walking Isochrone Extract for a 30-minute Journey from the Development Site

Cyclists

Existing Cycling Infrastructure

4.11 It is widely recognised that cycling has the potential to substitute for short car trips, particularly those of less than 5km. It can be appreciated that all of Colney Heath, in addition to the eastern extents of St Albans and the southern extents of Hatfield are accessible within a 5km cycling distance of the site.

4.12 National Cycle Route 61 is accessible within approximately 3km of the site off Smallford Lane, equating to a short 9-minute cycle. Route 61 facilitates access to St Albans to the west, and links to Route 6 which provides access to Watford to the south west, and Leighton Buzzard to the north west. Additionally, National Cycle Route 12 is accessible within approximately 2km of the site off Dixons Hill Road, which equates to a 7-minute cycle journey. Route 12 facilitates access to South Mimms to the south and Welwyn Garden City to the north.

4.13 Cycling is well suited to form part of longer journeys made by public transport. Therefore, it is important to note that a number of train stations within the vicinity of the site offer cycle storage; details are presented in Table 4.2 below.

Table 4.2: Local Train Station Cycle Storage Facilities

Train Station	Cycling Distance	No. of Cycle Spaces	CCTV / Sheltered
Welham Green	3.5km / 12 minutes	10	Yes / No
Hatfield	5.2km / 18 minutes	50	Yes / Yes
St Albans	7.8km / 29 minutes	1150	Yes / Yes

4.14 From Table 4.2 it can be appreciated that there are ample cycle storage facilities available at local train stations within a reasonable cycling journey.

Existing Cycling Behaviour

4.15 2011 Census data shows that 1.3% of residents commuting to places of work from within 'Colney Heath: 04004802', do so by bicycle. This is less than the national average of 3.2%.

4.16 Census data from 2011 also shows that 33.7% of 'Colney Heath: 04004802' commuters live within 5km of their place of work, where approximately 10.5% are considered to live within a walkable commute to work. Therefore, some 23.1% of residents for the aforementioned Parish area could reasonably take up cycling as a main mode of travel to work whilst maintaining a journey time that does not exceed 30 minutes. Given the percentage of residents living within this commutable distance, there is potential to increase the level of cycling amongst residents of the area.

4.17 As noted above, a distance of 5km is considered to be a reasonable travel distance by bicycle. The cycling speed for the average adult travelling on-road is considered to be circa 15.5kph (9.6mph); whereas a reasonably fit and proficient cyclist travelling via racing bike on a fairly flat terrain is expected to be capable of speeds circa 25kph (15.5mph).

4.18 Given the speeds riders are considered to be capable of, the average rider would travel 5km in approximately 19 minutes. However; to remain consistent with the assessment carried out for walking in the surrounding area, this section of the report will consider cycling destinations which are accessible within a 30-minute cycling journey.

4.19 A list of destinations considered to be accessible within a 30-minute cycling journey from the development site, together with the corresponding journey distances and times are shown in Table 4.3. A cycling isochrone map showing the extent of all possible journeys up to 30 minutes from the proposed site access are presented in Figure 4.2 below.

4.20 Excluding National Cycle Routes 61 and 12, there does not appear to be any dedicated on-road / off-road cycle provision within the surrounding areas of Colney Heath. As such, the current surrounding highway infrastructure dictates that cyclists travelling within Colney Heath should be travelling within the extent of the carriageway alongside vehicular traffic, as opposed to the adjacent footpaths.

4.21 A financial contribution to cycle infrastructure will be made according to the levels of contribution defined in the Hertfordshire Toolkit. The standard charge for this is £750 per plot.

4.22 Considering the nature of the surrounding highways, it can be appreciated that the potential for having a relatively low percentage of residents travelling to work by bicycle could partly be due to the lack of designated cycle provision providing encouragement for this mode of travel. As such, the provision of an independent cycleway in keeping with the scale of the proposed development would only result in the termination point directing cyclists onto the main carriageway, as opposed to joining an existing provision. This provision is therefore not considered beneficial.

Table 4.3: Destinations Accessible within a 30-minute Cycle from the Development Site

Destination	Journey Distance and Time
University of Hertfordshire, South Hatfield Post Office, Northdown Road Surgery, Evangelical Baptist Church, Hatfield Leisure Centre, Oak View Primary and Nursery School, Hatfield Community Free School, Co-Op Food, ALDI, McDonalds Hatfield, ASDA Hatfield Superstore, ASDA Pharmacy, Energie Fitness Gym, Boots, Cohens Chemist, Hatfield Library, Wrafton House Surgery NHS, Gracemead Church, The Galleria Outlet Shopping Centre, Bright Comets Day Nursery, Green Lanes Primary School, Ellenbrook Fields, Ellenbrook Recreation Ground & Play Area, Colney Fields Shopping Park.	Up to 5.0km Accessible within 20 minutes
Colney Medical Centre, Broad Colney Lakes Nature Reserve, Tesco Express, London Colney Primary School, London Colney Post Office, Highfield Park, St Albans Train Station, One Hatfield Hospital, Stanborough Park, Morrisons, The Odyssey Cinema, Hatfield House, Hatfield Park, Mill Green Museum and Mill, Stanborough Park Watersports Centre, Welwyn Garden City Train Station, Boots Pharmacy, Hatfield Business Park, Essendon Golf Club.	5.0km to 10km Accessible within 30 minutes

Figure 4.2: Cycling Isochrone Extract for a 30-minute Journey from the Development Site

Public Transport

Bus Services

4.23 There are a number of bus stops located within a short walking distance of the site. The closest bus stops, named 'Hall Gardens', are located on Hall Gardens Road to the west of the site, and are accessible within a short 5-minute walk. Figure 4.3 below presents other local bus stops within a comfortable walking distance of the site.

Figure 4.3: Map of bus stops within the locality of the proposed development site

4.24 The aforementioned bus stops serve Routes 200, 230, 305, and 312. These services facilitate access to Essendon, Brookmans Park, London Colney, Welwyn Garden City, St Albans, Potters Bar, Sandridge and Hatfield. Additionally, there is a Community Shopping Bus between Colney Heath and Asda on Thursday mornings; departing at 09:45 and retuning at midday. Copies of the aforementioned bus services' timetables and route maps are included in **Appendix E**.

4.25 The 'Hall Gardens' bus stops are sheltered on the side nearest the development. The opposite bus stop is not sheltered; however, the bus stop includes a sign post highlighting the location of the stop, the bus route being served; in addition to a copy of the relevant route's timetable.

4.26 A list of destinations considered to be accessible within a 30-minute bus journey from the development site, together with the corresponding journey distances and times are shown in Table 4.4. A public transport (bus) isochrone map showing the extent of all possible journeys up to 30 minutes from the nearest bus stop to the site access is shown in Figure 4.4.

Table 4.4: Bus Destinations, Route Numbers and Journey Times

Route	Destinations	Journey Time	Frequency	Operator
200	Brookmans Park	20 minutes	Mondays only between 09:51 and 10:33	Centrebus
	Welham Green	13 minutes		
	London Colney	5 minutes		
230	St Albans	17 minutes	Wednesdays only between 10:32 and 11:37	Centrebus
	Hatfield	23 minutes		
305	St Albans	26 minutes	Monday – Friday between 08:51-17:12 (5 services per day) Saturdays between 07:41-14:02 (5 services per day)	Metroline
	Potters Bar	17 minutes		
312	Hatfield	13 minutes	Wednesdays only between 09:45 and 12:42	Centrebus Metroline

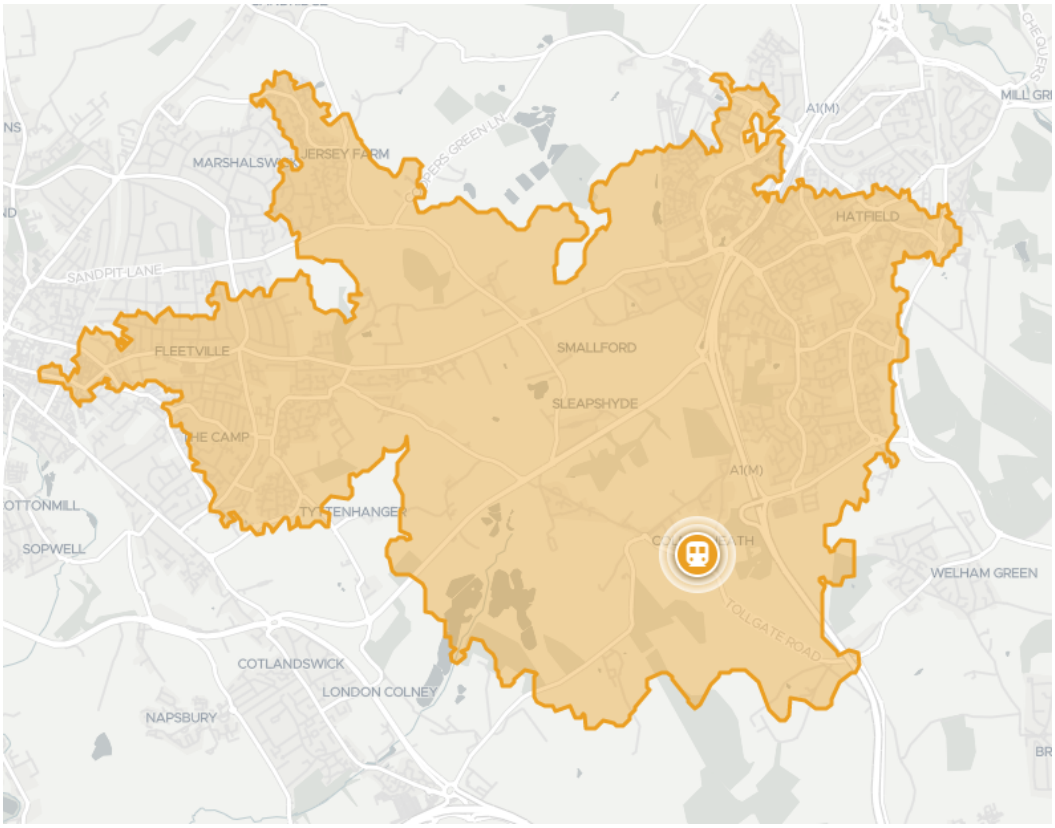


Figure 4.4: Public Transport – Bus Isochrone Extract for a 30-minute Journey from the Development Site

Existing Bus Patronage

4.27 2011 Census data shows that 2.4% of the residents that regularly commute to work from within 'Colney Heath: E04004802'; do so by bus, minibus or coach. This is less than the national average of 8.2%.

4.28 Census data from 2011 also shows that 50% of 'Colney Heath: E04004802' commuters live within 10km of their place of work. However; it should be noted that around 33.7% of these residents are considered to live within a reasonable walking are/ or cycling distance. Therefore; 16.4% of these residents are considered to live a sufficient distance from their place of work that would specifically benefit from travel by public bus.

4.29 The 'Hall Gardens' bus stops are accessible within a short 5-minute walk. The alternative aforementioned bus stops within the immediate vicinity of the site are also accessible within a 13-minute walk. The Pre-Application response asked for accessible raised kerbs to be provided at the existing bus stops; the developer has agreed to facilitate this.

4.30 The range of bus stops and their respective bus services ensure that there is access to a range of amenities and services within and outside of Colney Heath. The use of these services will therefore be encouraged as part of the Green Travel Plan.

Train Services

4.31 The nearest railway station to the site is Welham Green Train Station, which is accessible within 3.5km of the site, equating to a 12-minute cycle or 5-minute drive. Additionally, St Albans Train Station is accessible within 7.8km of the site, equating to a 29-minute cycle or 13-minute drive. It is also important to note that both of these stations are accessible via the aforementioned bus services. The stations are located on the East Coast Mainline, with services operated by Great Northern. A map showing the extent of destinations accessible by train from Welham Green, in addition to St Albans is included in **Appendix E**.

4.32 As previously mentioned, a commuting journey time between 25 and 30 minutes by a single mode of travel is generally considered the preferred acceptable limit for the surrounding area. When travelling by train it is appreciated that a number of patrons will combine this journey with another mode of transport such as the public bus or private car.

4.33 Welham Green Train Station benefits from a car park that is open at all times, offering 32 parking spaces; in addition to 10 cycle spaces. Additionally, St Albans Train Station offers a car park open at all times with 1565 spaces, and 1150 cycle spaces.

4.34 The weekday average frequency and journey times for direct trains between Welham Green and St Albans and their respective key destinations are presented in Table 4.5. An isochrone map showing the extent of all possible journeys by train within 30 minutes of the proposed development site is shown in Figure 4.5.

Table 4.5: Popular Train Destinations, Service Frequencies and Journey Times from Welham Green and St Albans Station

Station	Destination	Frequency of Peak Hour Service	Journey Time
Welham Green	Moorgate	4	46 minutes
	Welwyn Garden City	2	8 minutes
St Albans	Sutton (London)	2	1 hour 37 minutes
	Bedford	3	40 minutes
	London St Pancras International	3	22 minutes

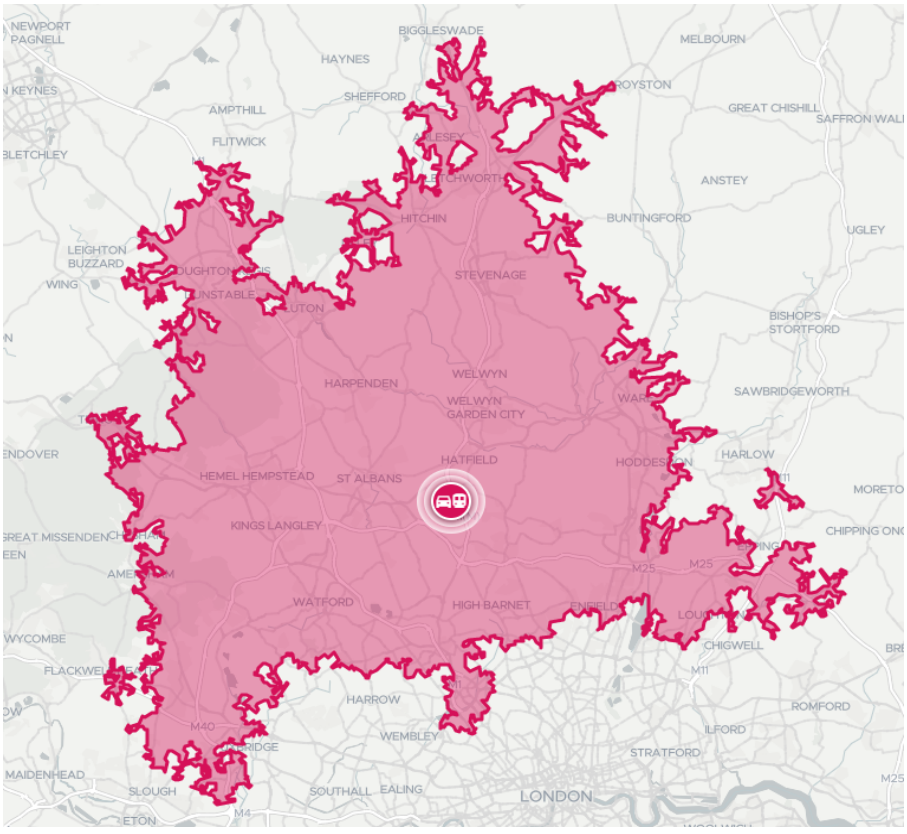


Figure 4.5: Public Transport and Car Isochrone Extract for a 30-minute Journey from the Development Site

Existing Train Patronage

4.35 2011 Census data shows that 14.9% of the residents that regularly commute to work within 'Colney Heath: 04004802'; do so by train. This is far above the national average of 5.7%.

4.36 Census data from 2011 also shows that 50% of 'Colney Heath: 04004802' commuters live further than 10km from their place of work, equating to approximately 1,201 people. Given the encouraging figures of existing train use, there is still potential for this to increase. This is anticipated to be achievable through the measures outlined in the Green Travel Plan.

4.37 It is probable that the high proportion of individuals commuting by train can be attributed to the number of train stations within a short distance of Colney Heath. This may also partly be a cause for the reduced number of individuals who travel by bus.

Services and Facilities Accessible Non-Vehicular Modes of Travel

Accessibility

4.38 Accessibility includes access to all those land uses that are required to sustain day-to-day living. These will include employment opportunities, retail facilities, education establishments and recreation facilities.

4.39 The location of the site in relation to the surrounding land uses ensures that it is well placed with regard to a mix of services, facilities and employment opportunities within a 2km walk and 5km cycle.

Access to Employment

4.40 Main commercial centres tend to contain the main employment opportunities within any area. Large employment areas such as Hatfield and St Albans are all easily accessible by bus and rail from the site.

4.41 It is reasonable to assume that a proportion of the residents of the proposed development will be drawn to St Albans, London, Welwyn Hatfield and Hertsmere. Census information taken from the 2011 journey to work dataset for Colney Heath corroborates the popularity of the aforementioned locations as key workplace destinations. Therefore, it is logical to assume that residents will use the available public transport to access these locations.

Access to Schools

4.42 Access to education is considered to be particularly important on this site as it is anticipated that young families will acquire a number of the properties. Therefore, trips for educational purposes will potentially account for a large proportion of the overall site trip generation.

4.43 The site is well served by existing educational facilities with a number of schools located within a reasonable journey by foot or bicycle. These include nurseries; in addition to primary and secondary schools, and a university campus.

4.44 The closest nursery to the site, named University Day Nursery, is located approximately 1.8km to the north of the site on Roehyde Way, and is accessible within a 22-minute walk, or 6-minute cycle. The closest primary school to the site, named Colney Heath School & Nursery, is situated approximately 1.6km to the west of the site on High Street, and is accessible within an 19-minute walk. The closest secondary school to the site, named Beaumont School, is located approximately 4.8km to the west of the site on Austen Way, equating to a 17-minute cycling journey.

4.45 Additionally, the University of Hertfordshire campus is located to the east of the site in Hatfield. The campus is accessible within approximately 1.8km of the site, and is therefore accessible within a 23-minute walk, or a 7-minute cycle.

Access to Shopping Facilities

4.46 In respect of convenience goods, although it is anticipated that many will seek opportunities to purchase convenience goods on the way home from work (particularly with regards to 'top-up' shopping), the presence of Hatfield and St Albans, which includes Sainsburys, Morrisons, Aldi and Tesco Express, ensures that accessibility to such facilities remains local and convenient.

Leisure and Recreation

4.47 Within close proximity to the site, there are a number of recreation facilities and open spaces, including Hatfield Leisure Centre, Colney Heath Local Nature Reserve, Willows Lakes and North Mymms Park.

4.48 The local bus and train services also provide access to a number of other leisure opportunities within the wider areas of Hertfordshire, including retail stores, cinemas, restaurants and cafes.

Recorded Accident Data

Woods Hardwick

Architecture | Engineering | Planning | Surveying

Page Deliberately Blank.

Recorded Accident Data

The following paragraphs consider the number, frequency and severity of recorded road collisions observed on the surrounding highway network within the most recent 5-year period.

5.1 The available recorded accident data was taken from the CrashMap website https://www.crashmap.co.uk/Search, which was downloaded by Woods Hardwick Infrastructure LLP on 19th June, 2020. A copy of the extract taken from the CrashMap website, showing all recorded road collisions from 2015 to present are shown on the plans enclosed in **Appendix F**. At the time of writing this report, the most recent 5-year period of incidents shown on the CrashMap website occurred between 2015 and 2019.

5.2 As good practice, the review of recorded accident data within a transport document which will be used to support a planning application for a residential development should cover the most recent 5-year period of data available. In addition to this; the area of immediate concern is typically taken for all connecting roads that are located within a 500m radius of the proposed site access.

5.3 Vehicle distribution patterns used in this report are based on the latest available Census data and form part of the vehicle trip generation calculations for the proposed development. The calculations assume all vehicles from the proposed development exit onto Fellowes Lane heading either westbound to the Fellowes Lane / Tollgate Road T-junction, or eastbound to the Fellowes Lane / Bullen's Green Lane crossroads.

5.4 Since the pre-app discussion and response, in which the site access and offsite junction locations were scoped for modelling, an alternative site access position has been decided. We are therefore awaiting confirmation on whether off-site junctions to be modelled should also be updated. If this should be the case, any new junctions required for assessment will also be assessed with regards to accidents in the addendum report to follow.

Assessment of Accident Locations

Fellowes Lane / Tollgate Road (T-junction)

5.5 There have been two incidents located within the immediate vicinity of this junction. The first incident occurred in 2015 and was slight in nature, involving 2 vehicles and 1 casualty. The second incident occurred in 2016 involving 1 vehicle and 1 casualty.

Fellowes Lane / Bullen's Green Lane (crossroads)

5.6 There have been no incidents located within the vicinity of this junction.

High Street / Roestock Lane / Tollgate Road / Coursers Road (roundabout)

5.7 There have been no incidents located within the vicinity of this junction.

Proposed Site Access / Bullen's Green Lane (T-junction)

5.8 There has been one 'serious' incident located within the immediate vicinity of the proposed site access location; which occurred in 2017 and involved one vehicle and one casualty. This incident occurred in wet / damp and dark conditions, and was listed as having no 'carriageway hazards'. The collision occurred between the vehicle and a pedestrian who was in the carriageway, not on a designated crossing. For the full details of this accident, please refer to the accident report included in **Appendix F.**

Summary

5.9 From the accident data presented, there does not appear to be any significant accident pattern which could be exacerbated by the proposed residential development.

5.10 As a result of the proposed development, the safety of the surrounding highway network and its users is not considered to be put at a significantly adverse risk; therefore, the anticipated impact should be considered acceptable for planning purposes.

Impact Assessment

Woods Hardwick
Architecture | Engineering | Planning | Surveying

Page Deliberately Blank.

Impact Assessment

The following paragraphs provide a detailed review of the proposed development's resultant impact on the surrounding highway network.

6.1 This chapter of the report outlines the potential trip generation of the proposed development and explains how trip rates for the site have been derived to assess the impact on the surrounding highway network.

6.2 Due to the nature and location of the site, guidance was sought from Hertfordshire County Council (HCC) regarding which junctions it would be necessary to model. The following junctions set for modelling have therefore been agreed with HCC.

Trip Generation

Proposed Development

6.3 The methodology for calculating the anticipated trip generation for a proposed development is to use trip rate figures contained within the TRICS database. Trip rates are based on average traffic surveys conducted at similar sites throughout England (excluding Greater London, The Isle of Wight, and the Isle of Man).

6.4 The trip rates outlined in Table 6.1 have been extracted from the 'Mixed Private / Affordable Housing' category of the TRICS database; a full copy of the TRICS Output can be viewed in **Appendix G**. The figures are based on traditional AM and PM peak hours of 08:00-09:00 and 17:00-18:00 respectively.

6.5 The resultant trip generation based on the TRICS trip rates for the 100 proposed residential dwellings are presented in Table 6.2. Trip generation calculations from the proposed development are therefore shown to generate a total of 48 two-way trips during the AM Peak hour, and 49 two-way trips during the PM Peak hour. This equates to less than one vehicle travelling either to or from the site per minute within the peak hours.

6.6 These trip rates have been approved by HCC in their pre-application response.

Table 6.1: TRICS Trip Rates – Residential – Mixed Private / Affordable Housing

	Trip Rate (per dwelling)	
Peak Hour	**Arrivals**	**Departures**
AM (08:00-09:00)	0.111	0.360
PM (17:00-18:00)	0.328	0.159

Table 6.2: Proposed Trip Generation

	Trip Rate (100 dwellings)	
Peak Hour	**Arrivals**	**Departures**
AM (08:00-09:00)	12	36
PM (17:00-18:00)	33	16

Committed Development

6.7 The development officer confirmed in the pre-app response that there are no committed developments within the local area that need to be considered within this assessment.

Trip Distribution

Proposed Development

6.8 The proposed development vehicle distribution has been based on the 2011 Census data for the merged local authority district 'E02004938: St Albans 015' in which the site resides, taking account of the most popular workplace destinations.

6.9 The list of available workplace destinations was narrowed down by selecting only those destinations that received equal to or more than the average number of commuters from Colney Heath. Using this method, the top 15 most popular workplace destinations have been identified.

6.10 The Google Maps journey planner tool was used to determine the quickest routes to each workplace destination. This methodology is considered robust seeing as the interactive website facility takes into account delays due to peak hour traffic.

Growth Rates

6.11 In order to ensure that the proposed development can be suitably accommodated on the existing surrounding highway network, junction modelling carried out will be tested up until the future year 2030. This exceeds the 5-year period which is generally accepted for junctions on the local highway network. The below growth rates have been agreed by HCC in their pre-app response.

6.12 Growth rates have been calculated using the latest available TEMPro dataset for the Parish region of Colney Heath in which the site resides. The following AM and PM growth figures have been calculated:

Growth Rates	
AM	**PM**
1.0862	1.0863

Junction Modelling

6.13 Guidance was sought through the pre-application assessment, in which the following junctions were proposed for modelling:

- Junction 1 – Proposed Site Access Junction (T-junction)
- Junction 2 – Fellowes Lane / Tollgate Road (T-junction)
- Junction 3 – High Street / Roestock Lane / Tollgate Road / Coursers Road (roundabout)

6.14 The pre-app response confirmed that Junction 3 would not require a full capacity assessment due to its minimal development impact. Therefore; it has been agreed with the Highways Officer that Junction 1 and Junction 2 will require assessment.

6.15 The pre-app also confirmed that the traffic counts required for the junction assessments would not be able to be undertaken until schools have returned. Therefore, the capacity assessments at junction locations confirmed within the pre-app will be undertaken and presented in an addendum at the earliest opportunity.

6.16 The site access off Fellowes Lane was scoped and agreed with HCC; however, an alternative access position off Bullen's Green Lane has since been proposed. Confirmation from HCC as to whether the off-site junctions to be modelled should also be updated is currently awaited.

Summary and Conclusion

Woods Hardwick
Architecture | Engineering | Planning | Surveying

Page Deliberately Blank.

Summary and Conclusion

The following paragraphs summarise the findings of this report and provide a conclusive recommendation for whether the development should be supported through the planning process.

7.1 This Transport Assessment (TA) has been prepared by Woods Hardwick Infrastructure LLP on behalf of Canton Ltd in support of an Outline Planning Application for the proposed residential development on land known as 'Land off Bullens Green Lane, Colney Heath, St Albans'.

7.2 The proposed development is for the construction of up to 100 residential dwellings, comprising a mix of detached, semi-detached and terraced properties.

7.3 The site layout has been designed in accordance with the relevant transportation policy, including the provision for adequate car and cycle parking.

7.4 A desk study audit has been carried out on the opportunities available for sustainable modes of travel that provide an alternative to travel by car in single occupancy vehicle journeys. It has been concluded that the site lies in a sustainable location, where there are a selection of services and amenities within the preferred walking and cycling distances; in addition to reasonable commuting journey times using public transport.

7.5 The site benefits from being located in proximity to several bus stops, which are accessible within a comfortable 10-minute walk. The services operating from these bus stops facilitate access to key locations including Welwyn Garden City, St Albans and Hatfield, amongst other destinations.

7.6 A Green Travel Plan has also been produced for the proposed development, and should be read in conjunction with this report. It should be noted that the GTP represents a living document; therefore, it is expected to change over time to best suit the needs of future residents and / or visitors of the site and reflect the ongoing changes of the sustainable travel opportunities within the area as and when the residents or TPC consider this to be necessary.

7.7 From an assessment of recorded road collisions that have taken place within the most recent 5-year period on the surrounding highway network, there does not appear to be any significant cause for concern with regards to the safety of existing and future road users as a result of the development proposals. The frequency and severity of road accidents reviewed is not considered unusual given the locations in which they occurred.

7.8 Vehicular access to the site is to be provided off Bullen's Green Lane, via a priority T-junction. A potential pedestrian link is also being considered through the adjacent recreation ground; this is currently being agreed between client and landowner.

7.9 As agreed with Hertfordshire County Council when scoping for this assessment, the following junctions were determined to be assessed:

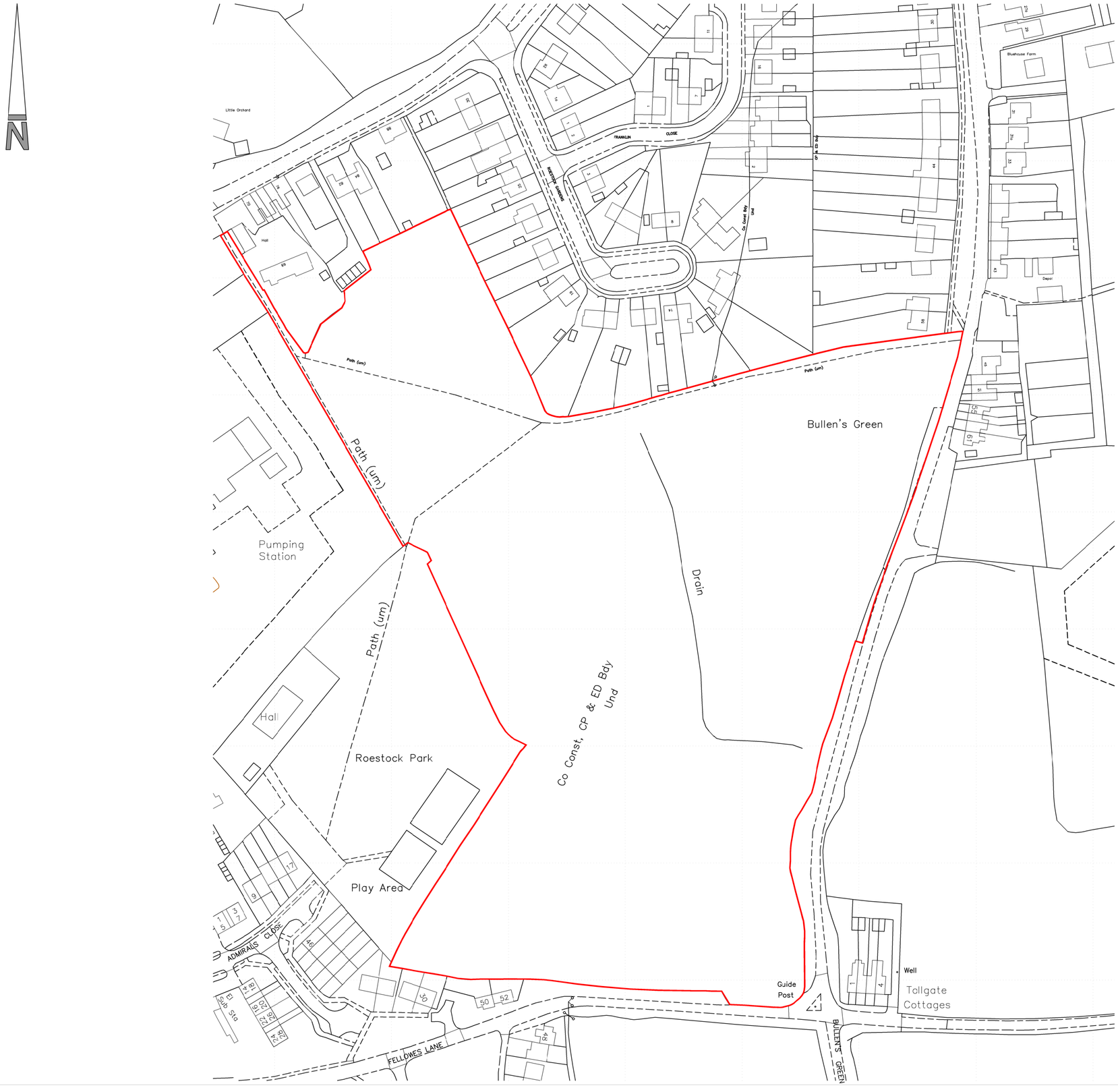
- Site Access / Bullen's Green Lane (T-junction)
- Fellowes Lane / Tollgate Road (T-junction)

7.10 Capacity assessments at the agreed junction locations will be undertaken during the AM and PM Peak periods using the TRL Software Junctions 9. These results will be presented in an addendum to this report when available.

7.11 **Based on all of the information provided within this Transport Assessment, it can be concluded that there is no reason why the proposed residential development should not be fully supported through the planning process in terms of highways and transportation.**

Appendix A

Site Location Plan



NOTES

1. Contractors must check all dimensions on site. Only figured dimensions are to be worked from. Discrepancies must be reported to the Architect or Engineer before proceeding. © This drawing is copyright.

2. Reproduced from OS Sitemap ® by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. © Crown copyright 2008. All rights reserved. Licence number 100007126.

REV	DESCRIPTION	DRN	CHD	DATE

■ PRELIMINARY ☐ INFORMATION ☐ TENDER
☐ CONSTRUCTION ☐ AS BUILT

SCALE	1:1250@ A2	DATE	MAY 20
DRAWN	RR	CHK	TF
DRAWING NO.	17981-1002	REV	B
TITLE	Roundhouse Farm, Roestock Lane Colney Heath		
DETAILS	Site Location Plan		

Woods Hardwick
Architecture | Engineering | Planning | Surveying

BEDFORD : HEAD OFFICE
15-17 Goldington Road
Bedford MK40 3NH
T: +44 (0) 1234 268862

BIRMINGHAM
Fort Dunlop, Fort Parkway
Birmingham B24 9FE
T: +44 (0) 121 6297784

ONLINE: mail@woodshardwick.com | woodshardwick.com

Appendix B

Site Layout Plan

NOTES

1. Contractors must check all dimensions on site. Only figured dimensions are to be worked from. Discrepancies must be reported to the Architect or Engineer before proceeding. © This drawing is copyright.

2. Reproduced from OS Sitemap ® by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. © Crown copyright 2008. All rights reserved. Licence number 100007126.

Key:

- Existing Trees & RPAs
- Existing Listed Building
- Denotes Exitsing PRoW
- Denotes Existing 'walked route'
- Denotes Existing Drainage
- Denotes Existing HV Cable
- Proposed Landscape Buffer
- Proposed Trees
- Proposed Green Space
- Denotes Proposed Site Access
- Potential Play Space
- Proposed Location of New Pump Station
- Denotes Proposed Attenuation
- Denotes Key/Focal Buildings
- Denotes New Footpath Route

DRAFT

REV	DESCRIPTION	DRN	CHD	DATE
D	Redline Boundary updated to suit Title Boundary and new site access location.	AJS	TF	13.08.2020

■ PRELIMINARY ☐ INFORMATION ☐ TENDER
☐ CONSTRUCTION ☐ AS BUILT

SCALE	1:1000 @ A2	DATE	July 2020
DRAWN	AJS	CHK	TF
DRAWING NO.	17981/1005	REV	E

TITLE: Land North of Fellows Lane
Colney Heath

DETAILS: Proposed Illustrative Layout

Woods Hardwick
Architecture | Engineering | Planning | Surveying

BEDFORD : HEAD OFFICE
15-17 Goldington Road
Bedford MK40 3NH
T: +44 (0) 1234 268862

BIRMINGHAM
Fort Dunlop, Fort Parkway
Birmingham B24 9FE
T: +44 (0) 121 6297784

ONLINE: mail@woodshardwick.com | woodshardwick.com

Appendix C

Pre-Application Response from Hertfordshire County Council

Environment and Infrastructure

George Beevor-Reid
Woods Hardwick

Development Management
Hertfordshire County Council
1st Floor Link
County Hall
Pegs Lane
Hertford, Herts SG13 8DF
www.hertfordshire.gov.uk

Tel: 01992 658326
Email: Alan.story@hertfordshire.gov.uk
My ref: SA/2246/2020
Your ref:
Date: 11/08/2020

Dear George

Re: North of Fellowes Lane and West of Bullens Green Lane, Colney Heath

Please accept my apology for the delay in providing the following. I recognise that you have sought a pre-application advice meeting, however I provide the following comments as an interim and suggest availability for a MS Teams meeting as follows;

Friday 14th August 2020 AM (10:00 – 12:00)
Monday 17th August 2020 Any
Wednesday 19th August 2020 PM (14:00 – 16:00)

If none of the above availabilities are convenient for yourself and / or client, please let me know and I will look to provide alternatives.

Pre-application advice is sought on land North of Fellowes Lane and West of Bullens Green Lane, Colney Heath, understood to pertain to development of upto 100 residential units.

The following review has regard to the following;

- Transport Scoping Note (Woods Hardwick 12/6/2020)
- Topo Survey (dwg 17981-7-855)
- Location Plan
- District Boundary Layout
- Illustrative Layout (dwg 17981/1001)

With regrets, I have been unable to open and view drwg provided entitled 17981-7-851-854 provided as .dwg format. Can this be provided in a pdf form (or similar) please.

Fellowes Lane is an unclassified road, providing a local access function. Speeds are 30mph, west of the junction of Fellowes Lane with Bullens Green Lane. Beyond this point speeds are subject to 60mph limit.

Bullens Green Lane provides the eastern boundary of the site, an unclassified, Local Access road subject to 60mph limit

Site is bounded (northern boundary) by Colney Heath Footpath 048, with links to Colney Heath Footpath 023 in turn enabling access to Roestock Lane. Roestock Lane is similarly an unclassified road, providing local access function, subject to 30mph limit.

I can confirm from the level of development proposed, a Transport Assessment would be a requirement of any formal application for planning.

Access

A priority junction to Fellowes Lane is proposed. Noting this is within 30mph limit section, visibility shall need to be demonstrated to a minimum of 2.4m (X distance) x 43m (SSD adjusted) in both directions, provided within Land in the applicants control and / or highway extents. Plans demonstrating such standards are met should form part of the Transport Assessment.

The form of access, being a simple priority junction, appears appropriate.

Whilst, a level of development of 100 dwellings may reasonably be served by a local access road of 4.8m width, you are advised that Roads in Hertfordshire (the Highway Authorities design guide) is undergoing review at this time. General direction of travel in such review is to require carriageway width of 5.5m – as such width removes the potential for obstruction to large vehicles arising from parked vehicles. Bellmouth access should be sufficient in design to accommodate all turning movements anticipated (swept paths to be provided).

I would observe that whilst the TA scope suggests single point of access onto Fellowes Lane is proposed, reference to Illustrative Layout (dwg 17981/1001) suggests the proposal includes a secondary access onto Bullens Green Lane. This appears to serve a limited number of dwellings. At this point Bullens Green Lane is 60mph. Provision of visibility splays would need to be DMRB standards. It is recommended that a single point of vehicular access is maintained to this site. Given the limited width of Bullens Green Lane and prevalence of on-street parking, any access at this point would require junction protection (DYLs) in order to ensure that turning movements can be accommodated. Further, whilst footways commence in the vicinity of 58 Bullens Green Lane, there would be a requirement to link the site to this network at this location.

Any application should include Road Safety Audit (Stage 1) of access proposals in order to demonstrate that their design represents an acceptable impact on network safety.

There shall be a need, as part of technical approval of the access (S278 stage) to consider street lighting as part of the final design.

Trip rates

I can confirm satisfaction with the TRICS assessment presented within the Transport Scoping Note. I further confirm acceptance of the TEMPRo growthing factor applied to these rates.

Clarity is sought whether proposals shall represent a site within either the emerging Welwyn Hatfield Local Plan (further call for sites 2019) or the recent St Albans Local Plan.

I can confirm no committed development locally that shall need to be considered within the TA.

I am satisfied that modelling of junction (J3), being Tollgate Rd / Roestock Lane / Coursers Road shall be unnecessary, given development impacts. I would observe that parking within Fellowes Lane in the immediate vicinity to Tollgate Lane appears to restrict carriageway width, giving rise to potential for queuing existing – modelling of this junction should be undertaken. Opportunities to improve the operation of this junction (DYLs, or a scheme to provide inset bays such that the junction problems arising from parked vehicles in close proximity may be necessary).

In respect of traffic counts, it is recognised that the government has relaxed many covid restrictions and has issued a commitment that children will be back in full time education come the next academic year. Whilst the HA recognise traffic conditions have not quite returned to normal, they are approaching a reasonable reflection of historical use. I would be satisfied that traffic counts undertaken on existing flows shall suffice for the purposes of this application. It is necessary to observe that the Technical Note suggests a summer application, but I cannot accept traffic flows measured during the school break – as this is too far removed from usual conditions. It is an accepted fact that we would not accept flows that are measured during school vacations and, whilst the above, is a pragmatic view consider there is no way to avoid directing you to ensure flows are assessed during a reasonable approximation of normal conditions (accepting the above).

Clearly the above advice is caveated that it a local lock down is announced affecting Hertfordshire, or a major urban settlement within close proximity to your site, then the above advice shall not be applicable.

Alternatively, you are invited to contact our data team who may have historical flow data in the vicinity, but noting the reasonably isolated location on non-strategic routes, this cannot be guaranteed. Our data team can be consulted here;

https://www.hertfordshire.gov.uk/services/highways-roads-and-pavements/speed-awareness-and-driver-training/transport-and-accident-data/transport-and-accident-data.aspx#traffic

Sustainability

Footway network adjacent to the site, on Fellowes Lane is limited – expiring at the limit of the spur road (Fellowes Lane serving properties numbered 20 to 48). It shall be necessary for development proposals to provide appropriate links between the development and the wider footway network. Without the provision of appropriate footway links the site would be poorly served in terms of any mode of travel except use of the private car, contrary to the Highway Authorities Local Transport Plan Policies 1 and 5.

Highway boundary extents may be sourced here;

https://www.hertfordshire.gov.uk/services/highways-roads-and-pavements/changes-to-your-road/extent-of-highways.aspx

Development proposals should identify the means by which adequate footways to an acceptable standard (2m) may be delivered in order that the development is safety accessible by pedestrians and other vulnerable road users. There shall be a need, wherever footway availability (and constraints) require pedestrian movement from opposite sides of carriageway to identify opportunities for safe crossing points (minimum dropped kerb with tactile provision).

Whilst it is recognised that the site contains within its curtilage rights of way, that potentially provide links to Roestock Lane, such routes are unlit internally and unlikely to be attractive for users in hours of darkness. Reliance therefore on RoW connections for wider permeability is limited.

Colney heath to the east provides limited shopping facilities and a primary school (approx. 1.2km west of the site, 15 min walk distance). Bus stops locally are available on Tollgate Road, and similarly, shall require the site to provide appropriate footway connectivity to enable residents the opportunity to have a choice of travel modes. Stops locally are provided with bus flag, timetable (and for westbound routes) shelter, but fail to provide kassel (accessible) kerbing. The highway authority would expect that the development includes provision for upgrade of stops to enable residents (including those with mobility impairment) the ability to access such services.

Tollgate Road / High Street Colney Heath provide an on-carriageway advisory cycle route, linking to the North Orbital Road. The Highway Authorities A414 Strategy identifies improvements at the Colney Heath Longabout to address safety concerns and improve conditions to overcome the severance that the A414 represents in order to enable onward travel linking to the Alban Way (NCN 61). The HA sets out it's approach to developer contributions within its' toolkit available here;

https://www.hertfordshire.gov.uk/about-the-council/freedom-of-information-and-council-data/open-data-statistics-about-hertfordshire/who-we-are-and-what-we-do/property/planning-obligations-guidance.aspx

And emerging revised guidance here;

https://www.hertfordshire.gov.uk/about-the-council/consultations/environment/draft-developer-contributions-guide-consultation.aspx

It would be reasonable, to any scheme found acceptable to the HA to require a contribution towards measures presented within the above supporting strategies to the Hertfordshire Local Transport Plan.

It is recognised that whilst some of the site would be within 400m of bus stops in Hall Gardens and Tollgate Rd bus services within Colney Heath are very limited. There are 3 routes with only one service in each direction on one day of the week, and the best bus route (the 305 Potters Bar/Colney Heath-St Albans/Sandridge) only has up to 4 per day (less freq Sat). It is recognised that the site is not large enough to fund a service diversion or improvement, however Local Plan growth identified within the Hertsmere area may lead to service enhancements. On the scale of development proposed, whilst access to alternatives to car use are of limited capacity, subject to improving facilities and the above required links to local footway network, I do not consider that the HA would present significant concern in respect of sustainability.

Servicing and Refuse

Noting that the site spans cross boundary, the HA would advise that refuse vehicle specifications shall reasonably differ. Presently the HA can confirm that the types of vehicles in employ of the local authority as waste collection authority are as follows;

Welwyn & Hatfield District:	Olympus Twin Pack, Elite2, L:11.375m, W:2.550m.
St Albans	L:10.875m x W:2.5m.

It is recommended that tracking for the more onerous vehicle (WHDC) is utilised. The HA itself would recommend tracking be undertaken for a Mercedes Econic 12.2m long vehicle for the purposes of tracking of refuse vehicles, and as this features four wheel steer does not provide particularly onerous. Whilst this may not represent the largest in use by Welwyn Hatfield / SADC it does 'future proof' the development noting that

other districts use larger vehicles, and that any future contract change by the district might involve use of this larger vehicle for economy reasons.

In terms of emergency vehicle access, the Hertfordshire Fire and Rescue Service have the following requirements.

Appliance Type	Min. width of road between kerbs (m)	Min. width of gateways (m)	Min. turning circle between kerbs (m)	Min. turning circle between walls (m)	Min.clearance height (m)	Min. carrying capacity (tonnes)
Pump	3.7	3.1	16.8	19.2	3.7	19
ALP	3.7	3.1	26	29	4	26

Maximum length	**8.1m**
Maximum height	**3.3m**
Maximum width	**2.9m (including mirrors)**
Laden weight	**19 tonnes**
Minimum ground clearance	**220mm**

Layout

As above, only the main access road would be considered for adoption. All other areas shall remain in private control, and arrangements should be put in place to ensure that the future maintenance of such areas shall be appropriately funded.

Not withstanding the above concerns about the secondary point of access to Bullens Green Lane, the general form of development is acceptable. All areas for the turning (turning heads) for refuse / emergency access should be tracked, recognising that the Masterplan currently submitted may be subject to change.

A concern is presented on the short cul-de-sac in proximity to the main access to Fellowes Lane. This short cul-de-sac appears to be provided by dropped kerb access (not unreasonably) but should be minimum 15m off-set from the junction effective give way line in the interest of safety.

Trees adjacent to any vehicle crossover access to private parking should not interfere with necessary visibility splays appropriate for the expected speeds. Any trees' within the liits of the adoptable highway network would be expected to secure commuted sums for their future maintainance and provided within agreed tree pits to limit their impacts on the maintenance of footways.

Travel Plan

Given the scale of development proposed, it shall be necessary to secure a residential travel plan. Full details may be found here;

https://www.hertfordshire.gov.uk/media-library/documents/highways/development-management/travel-plan-guidance.pdf

It is the policy of Hertfordshire County Council to secure a contribution towards the costs of monitoring, evaluating and supporting the delivery of the Travel Plan. Such contribution shall be £6,000 indexed in accordance with the provisions in the above guidance.

Adoption

The Highway Authority sets out its' approach to adoption of streets here;

https://www.hertfordshire.gov.uk/media-library/documents/highways/development-management/section-3-legal-and-procedural-highways-design-guide.pdf

And describes that HCC will need to be satisfied that any roads or areas that are to be adopted are of significant public utility and have been constructed in accordance with the approved details and in compliance with the specification of works and materials.

In this context utility has the meaning of usefulness. On developments with no through route, only the main access road will be considered for adoption. Residential access roads serving underground car parks, supported by structures or taking the form of short cul-desac with no wider highway benefit will not be considered for adoptio

Rights of Way

Any proposals impacting on the Rights of Way within the site should be discussed with the County Councils Rights of Way team, particularly in respect of any changes to the materiality of the routes provided, as well as any potential diversions or other impacts. The Rights of Way team can be contacted here;

row@hertfordshire.gov.uk

Finally, it is necessary for me to conclude with observing that in accordance with Hertfordshire County Councils Highways DM Protocol for pre-application advice (http://www.hertsdirect.org/docs/pdf/h/hwaysprotocol.pdf) any advice given by County Council officers for transport pre-application enquiries does not constitute a formal response or decision of the Council with regards to future planning consents. Any views or opinions expressed are given in good faith, and to the best of ability, without prejudice to the formal consideration of any planning application, which will be subject

to public consultation and ultimately decided by the Planning Authority. The County Council cannot guarantee that new issues will not be raised following submission of a planning application and consultation upon it. It should be noted that the weight given to pre-application advice will decline over time.

Please be aware that Hertfordshire County Council is subject to requirements under the Freedom of Information Act 2000 and Environmental Information Regulations 2004. Where the County Council receives a request to disclose any information in relation to this discussion, it will notify and consult with you concerning its possible release. However, the County Council reserves the right to disclose any such information it deems appropriate and shall be responsible for determining at its absolute discretion whether the information is exempt from disclosure in accordance with the EIR or FOIA.

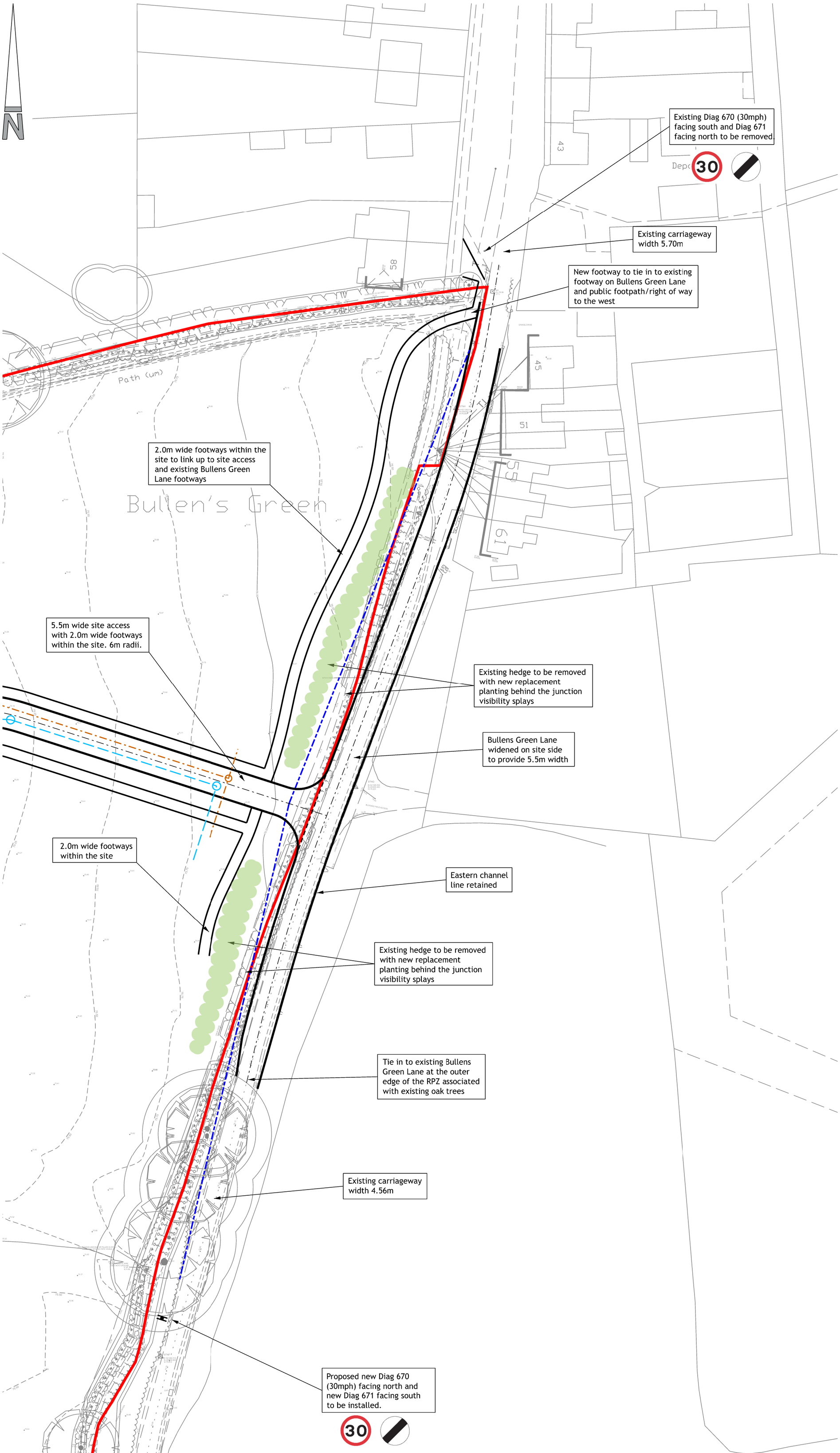
Sincerely

Alan Story
Senior Development Officer

Page Deliberately Blank.

Appendix D

Site Access Drawing



NOTES

1. Contractors must check all dimensions on site. Only figured dimensions are to be worked from. Discrepancies must be reported to the Architect or Engineer before proceeding. © This drawing is copyright.

2. Reproduced from OS Sitemap ® by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. © Crown copyright 2008. All rights reserved. Licence number 100007126.

3. Until technical approval has been obtained from the relevant authorities, all drawings are issued as preliminary and not for construction. Should the Contractor commence site work prior to approval being given it is entirely at his own risk.

SAFETY, HEALTH AND ENVIRONMENTAL

In addition to the hazards, risks normally associated with the type of work detailed on this drawing, note the following significant risks and information.

Construction:

1.

2.

For information relating to end use, maintenance, demolition, see the health and safety file.

It is assumed that all works will be carried out by a competent Contractor, where appropriate, to an approved method statement.

KEY

Site Boundary

Visibility Splays 4.5m x 90.0m

REV	DESCRIPTION	DRN	CHD	DATE
A	Access moved from Fellowes Lane	JGF	JGF	13/08/2020

☐ PRELIMINARY ☐ INFORMATION ☐ TENDER

☐ CONSTRUCTION ☐ AS BUILT

SCALE	1:500 @ A2	DATE	July 2020
DRAWN	IZ	CHK	GBR
DRAWING NO.	18770-FELL-5-500	REV	A

TITLE: Land North of Fellows Lane
Colney Heath

DETAILS: Site Access

DRAFT

Woods Hardwick
Architecture | Engineering | Planning | Surveying

BEDFORD : HEAD OFFICE
15-17 Goldington Road
Bedford MK40 3NH
T: +44 (0) 1234 268862

BIRMINGHAM
Fort Dunlop, Fort Parkway
Birmingham B24 9FE
T: +44 (0) 121 6297784

ONLINE: mail@woodshardwick.com | woodshardwick.com

Appendix E

Public Transport Information

Woods Hardwick

Architecture | Engineering | Planning | Surveying

Centrebus

Essendon Mill - Colney Fields 200
via Brookmans Park
Welwyn Garden City - Welham Green 201
via Essendon - Brookmans Park

Monday to Friday

Ref.No.: 2003

Service No	*200*	*201*
	M	TF
Welwyn Garden City, Bus Stn	.....	1245
Bessemer Road, Business Parks	.....	1248
Panshanger, Morrisons	.....	1252
Essendon Mill, Millgreen Cottages	0951	1301
Essendon, War Memorial	0953	1304
Essendon, Glebe Cottages	0955	1306
Wildhill, The Woodman	0958	1310
Bell Bar, The Firs	1003	1314
Bell Bar, Cock o' The North	1004	1315
Brookmans Park, Kentish Lane	1006	1317
Brookmans Park, Moffats Lane	1008	1319
Brookmans Park, Bradmore Grn	1010	1321
Welham Green, Huggins La	1015	.....
Welham Green, Dixons Hill Rd	1019	1325
Welham Green, Station	.....	1326
Colney Heath, Admirals Cl	1026	.....
Colney Fields Retail Park	1033	.....

TF - Tuesdays and Fridays Only
M - Mondays Only

Service No	*201*	*200*
	TF	M
Colney Fields Retail Park	.....	1235
Colney Heath, Roestock La	.....	1240
Colney Heath, Admirals Cl	.....	1241
Welham Green, Station	0923	.....
Welham Green, Huggins La	.....	1249
Welham Green, Dixons Hill Rd	0924	1253
Brookmans Park, Bradmore Grn	0928	1257
Brookmans Park, Moffats Lane	0930	1259
Brookmans Park, Kentish Lane	0932	1301
Bell Bar, Cock o' The North	0934	1303
Bell Bar, The Firs	0935	1304
Wildhill, The Woodman	0941	1309
Essendon, Glebe Cottages	0944	1312
Essendon, War Memorial	0947	1314
Essendon Mill, Millgreen Cottages	0949	1316
Panshanger, Morrisons	0958	.....
Bessemer Road, Business Parks	1001	.....
Welwyn Garden City, Bus Stn	1004	.....

TF - Tuesdays and Fridays Only
M - Mondays Only

Centrebus

Welwyn Garden City - St Albans 230

via Hatfield - South Hatfield - Welham Green

Monday to Friday

Ref.No.: 2003

Service No	*230*
	W
Welwyn Garden City, Bus Stn	1032
Ludwick Way, Verulam Close	1036
QEII Hospital	1044
Hatfield, Station	1052
Hatfield, Town Centre	1056
Travellers Lane, Oxlease Dr	1058
South Hatfield, Millwards	1100
Welham Green, Station	1103
Welham Green, Huggins La	1105
Welham Green, Dixons Hill Rd	1109
Colney Heath, Roestock La	1114
Nicholas Breakspear School	1120
Oaklands, Colney Heath La	1122
Fleetville, Morrisons	1126
St Albans, City Station	1131
St Albans, St Peter's St	1137

W - Wednesdays Only

Service No	*230*
	W
St Albans, St Peter's St	1400
St Albans, City Station	1406
Fleetville, Morrisons	1411
Nicholas Breakspear School	1417
Colney Heath, Roestock La	1423
Welham Green, Huggins La	1430
Welham Green, Dixons Hill Rd	1434
Welham Green, Station	1435
South Hatfield, Millwards	1438
Travellers Lane, Oxlease Dr	1440
Hatfield, Town Centre	1442
Hatfield, Station	1446
QEII Hospital	1454
Ludwick Way, Verulam Close	1501
Welwyn Garden City, Bus Stn	1505

W - Wednesdays Only

305

(Potters Bar) - Brookmans Park / Tyttenhanger Green - St Albans - Sandridge

MONDAYS-FRIDAYS

STARTS 01 04 19 | SCHOOLDAYS | SCHOOL HOLIDAYS

	SDO	NSD										
POTTERS BAR, BUS GARAGE	0714	0721	----	----	----	----	----	----	----	----	----	----
BROOKMANS PARK, BLUE BRIDGE RD	0721	0728	----	----	----	----	1632	----	----	----	----	----
WELHAM GREEN, DIXONS HILL RD	0726	0733	----	----	----	----	1637	----	----	----	----	----
COLNEY HEATH, HALL GARDENS	||	||	----	1012	----	1312	||	----	----	----	----	----
COLNEY HEATH, HIGH STREET	0733	0740	----	1014	----	1314	1644	----	----	----	----	----
SMALLFORD, STATION ROAD	0741	0747	----	1020	----	1320	1650	----	----	----	----	----
HILL END, HILL END LANE	0749	0754	----	1026	---	1326	1656	----	----	----	----	----
TYTTENHANGER GREEN	||	||	0851	||	1108	||	||	----	----	----	----	----
FLEETVILLE, MORRISONS	0755	0759	0858	1030	1115	1330	1701	----	----	----	----	----
ST ALBANS CITY STATION	0806	0809	0903	1035	1120	1335	1706	----	----	----	----	----
ST ALBANS, ST PETER'S ST (ARR)	0812	0814	0908	1040	1125	1340	1712	----	----	----	----	----
ST ALBANS, ST PETER'S ST (DEP)	0812	----	0909	----	1125	1345	----	----	----	----	----	----
NEW GREENS, HIGH OAKS	0820	----	||	----	||	||	----	----	----	----	----	----
ST ALBANS, LANCASTER ROAD	----	----	0914	----	1130	1350	----	----	----	----	----	----
ST ALBANS, FIRBANK ROAD	----	----	||	----	1133	1353	----	----	----	----	----	----
SANDRIDGE, LANGLEY GROVE	----	----	0922	----	1142	1402	----	----	----	----	----	----

SATURDAYS

STARTS 06 04 19

POTTERS BAR, BUS GARAGE	0741	----	----	----	----	----	----	----	----	----	----	----
BROOKMANS PARK, BLUE BRIDGE RD	0748	----	----	----	----	----	----	----	----	----	----	----
WELHAM GREEN, DIXONS HILL RD	0753	----	----	----	----	----	----	----	----	----	----	----
COLNEY HEATH, HALL GARDENS	||	----	1012	----	1312	----	----	----	----	----	----	----
COLNEY HEATH, HIGH STREET	0759	----	1014	----	1314	----	----	----	----	----	----	----
SMALLFORD, STATION ROAD	0805	----	1020	----	1320	----	----	----	----	----	----	----
HILL END, HILL END LANE	0811	----	1026	---	1326	----	----	----	----	----	----	----
TYTTENHANGER GREEN	||	0851	||	1108	||	----	----	----	----	----	----	----
FLEETVILLE, MORRISONS	0815	0858	1030	1115	1330	----	----	----	----	----	----	----
ST ALBANS CITY STATION	0820	0903	1035	1120	1335	----	----	----	NO SERVICE ON ROUTE 305 ON SUNDAYS OR ANY BANK HOLIDAYS			
ST ALBANS, ST PETER'S ST (ARR)	0825	0908	1040	1125	1340	----	----	----				
ST ALBANS, ST PETER'S ST (DEP)	----	0909	----	1125	1345	----	----	----				
ST ALBANS, LANCASTER ROAD	----	0914	----	1130	1350	----	----	----				
ST ALBANS, FIRBANK ROAD	----	||	----	1133	1353	----	----	----				
SANDRIDGE, LANGLEY GROVE	----	0922	----	1142	1402	----	----	----				

305

Sandridge - St Albans - Tyttenhanger Green / Brookmans Park - (Potters Bar)

MONDAYS-FRIDAYS

STARTS 01 04 19 | SCHOOLDAYS | SCHOOL HOLIDAYS

						SDO	NSD					
SANDRIDGE, LANGLEY GROVE	0922	----	1142	----	1402	----	----	----	----	----	----	----
SANDRIDGE, CHURCH	0924	----	1144	----	1404	----	----	----	----	----	----	----
ST ALBANS, FIRBANK ROAD	0929	----	1149	----	||	----	----	----	----	----	----	----
ST ALBANS, LANCASTER ROAD	0933	----	1153	----	1409	----	----	----	----	----	----	----
NEW GREENS, TOWNSEND SCH	||	----	||	----	||	1540	----	----	----	----	----	----
ST ALBANS, ST PETER'S ST (ARR)	0938	----	1158	----	1414	1550	----	----	----	----	----	----
ST ALBANS, ST PETER'S ST (DEP)	0945	1045	----	1245	1414	1550	1550	1720	----	----	----	----
ST ALBANS CITY STATION	0950	1050	----	1250	1419	1556	1556	1726	----	----	----	----
FLEETVILLE, MORRISONS	0955	1055	----	1255	----	1601	1601	1731	----	----	----	----
HILL END, HILL END LANE	0959	||	----	1259	----	1605	1605	1735	----	----	----	----
TYTTENHANGER GREEN	||	1103	----	||	----	||	||	||	----	----	----	----
SMALLFORD, STATION ROAD	1005	----	----	1305	----	1612	1612	1742	----	----	----	----
COLNEY HEATH, HIGH STREET	||	----	----	||	----	1617	1617	1747	----	----	----	----
COLNEY HEATH, HALL GARDENS	1012	----	----	1312	----	||	||	||	----	----	----	----
WELHAM GREEN, DIXONS HILL RD	----	----	----	----	----	1622	1622	1752	----	----	----	----
BROOKMANS PARK, BLUE BRIDGE RD	----	----	----	----	----	1626	1626	1756	----	----	----	----
POTTERS BAR, BUS GARAGE	----	----	----	----	----	----	----	1803	----	----	----	----

SATURDAYS

STARTS 06 04 19

SANDRIDGE, LANGLEY GROVE	----	0922	----	1142	----	1402	----	----	----	----	----	----
SANDRIDGE, CHURCH	----	0924	----	1144	----	1404	----	----	----	----	----	----
ST ALBANS, FIRBANK ROAD	----	0929	----	1149	----	||	----	----	----	----	----	----
ST ALBANS, LANCASTER ROAD	----	0933	----	1153	----	1409	----	----	----	----	----	----
ST ALBANS, ST PETER'S ST (ARR)	----	0938	----	1158	----	1414	----	----	----	----	----	----
ST ALBANS, ST PETER'S ST (DEP)	0830	0945	1045	----	1245	1414	1550	----	----	----	----	----
ST ALBANS CITY STATION	0835	0950	1050	----	1250	1419	1556	----	----	----	----	----
FLEETVILLE, MORRISONS	0840	0955	1055	----	1255	----	1601	----	----	----	----	----
HILL END, HILL END LANE	||	0959	||	----	1259	----	1605	----	----	----	----	----
TYTTENHANGER GREEN	0848	||	1103	----	||	----	||	----	----	----	----	----
SMALLFORD, STATION ROAD	----	1005	----	----	1305	----	1612	----	NO SERVICE ON ROUTE 305 ON SUNDAYS OR ANY BANK HOLIDAYS			
COLNEY HEATH, HIGH STREET	----	||	----	----	||	----	1617	----				
COLNEY HEATH, HALL GARDENS	----	1012	----	----	1312	----	||	----				
WELHAM GREEN, DIXONS HILL RD	----	----	----	----	----	----	1621	----				
BROOKMANS PARK, BLUE BRIDGE RD	----	----	----	----	----	----	1625	----				
POTTERS BAR, BUS GARAGE	----	----	----	----	----	----	1632	----				

SDO - Schooldays Only

NSD - Not Schooldays

Service operated under contract to Hertfordshire County Council by Metroline, Potters Bar Garage. Tel 01707 347700, email routes84and242@metroline.co.uk

Centrebus

Bell Bar - Hatfield Tesco 312

via Welham Green

Monday to Friday

Ref.No.: 2003

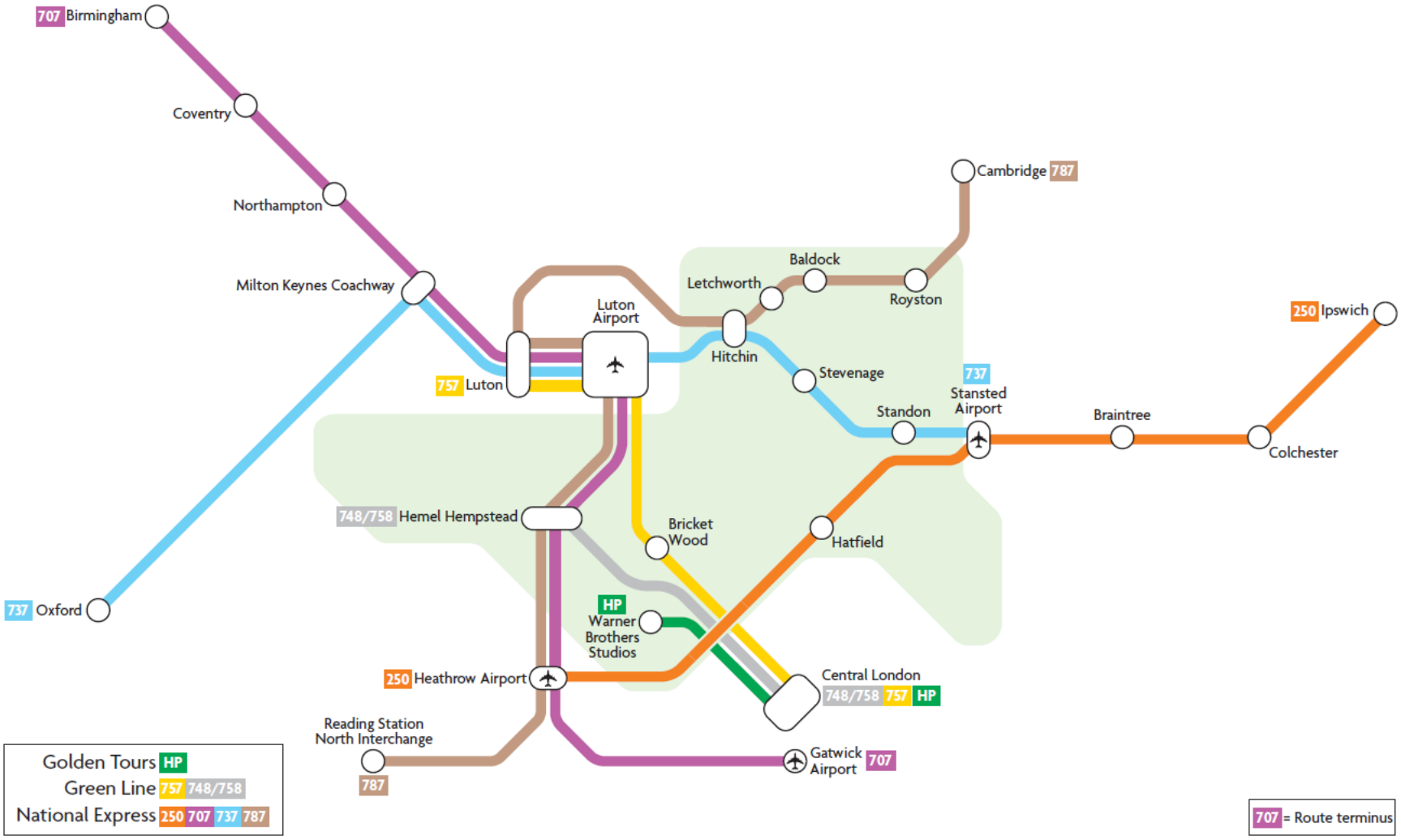
Service No	*312*
	W
Bell Bar, The Firs	0945
Welham Green, Station	0949
Welham Green, Huggins La	0951
Welham Green, Dixons Hill Rd	0955
Colney Heath, Admirals Cl	1001
Colney Heath, Roestock La	1003
Hatfield, The Galleria	1010
Hatfield, Hillcrest	1014
Hatfield, Town Centre	1016
The Ryde, Fawn Court	1018
Hatfield, Gt Nth Rd Tesco	1021

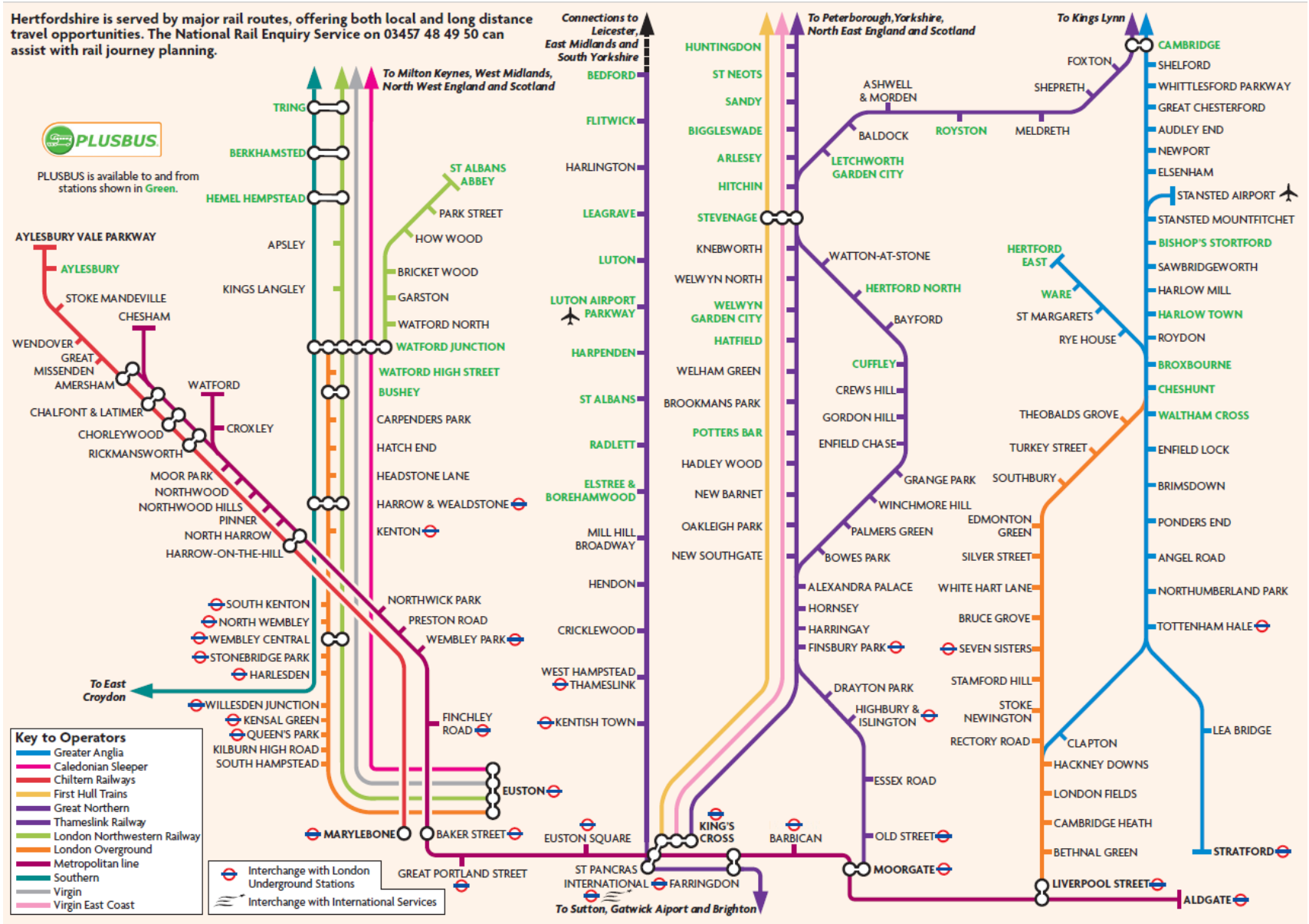
W - Wednesdays Only

Service No	*312*
	W
Hatfield, Gt Nth Rd Tesco	1205
The Ryde, Fawn Court	1209
Hatfield, Town Centre	1212
Hatfield, Hillcrest	1214
Hatfield, The Galleria	1218
Colney Heath, Admirals Cl	1224
Welham Green, Huggins La	1226
Welham Green, Dixons Hill Rd	1233
Welham Green, Station	1237
Bell Bar, The Firs	1242

W - Wednesdays Only

Hertfordshire Express Coach Services



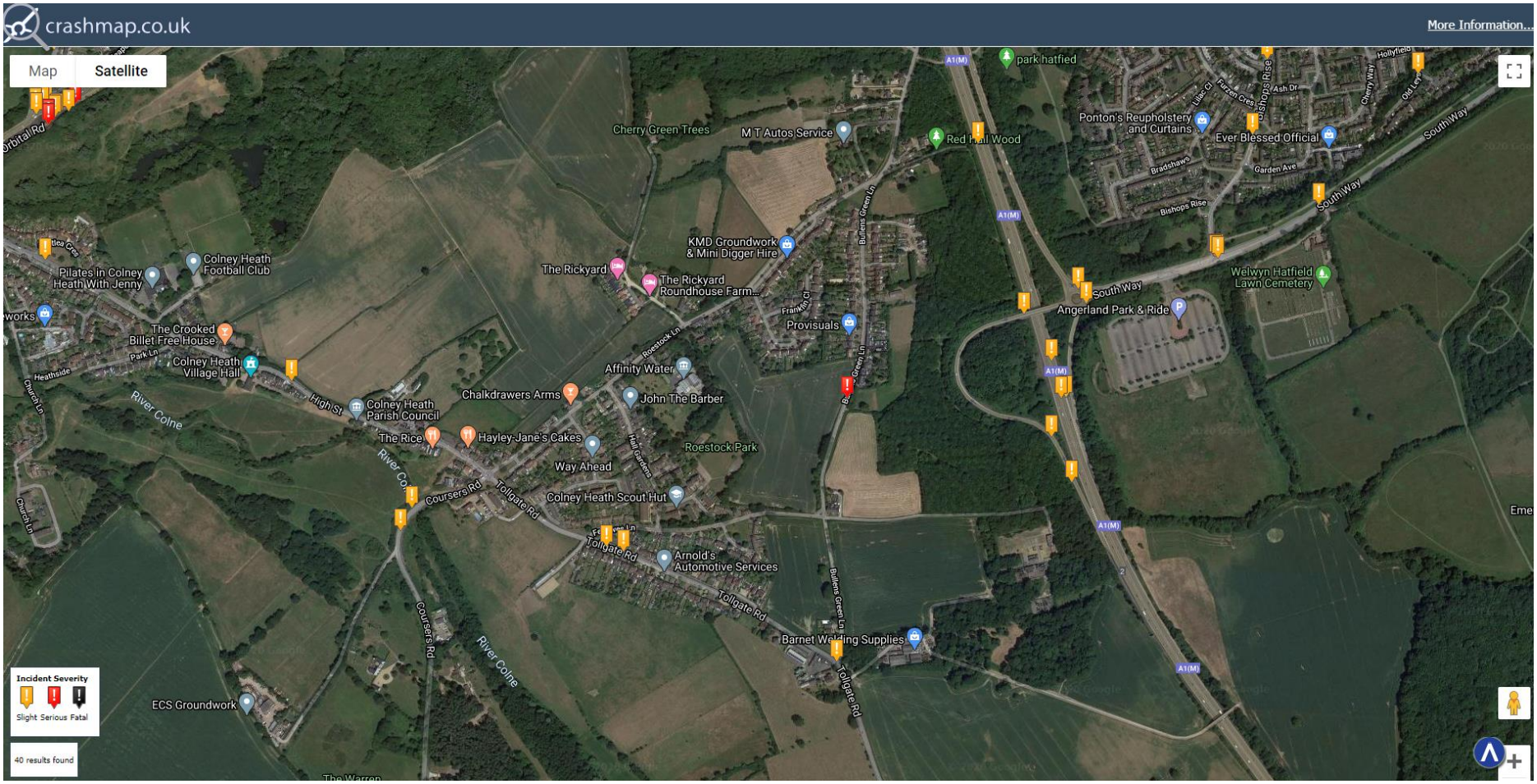

Hertfordshire is served by major rail routes, offering both local and long distance travel opportunities. The National Rail Enquiry Service on 03457 48 49 50 can assist with rail journey planning.
PLUSBUS
PLUSBUS is available to and from stations shown in Green.
To Milton Keynes, West Midlands, North West England and Scotland
Connections to Leicester, East Midlands and South Yorkshire
To Peterborough, Yorkshire, North East England and Scotland
To Kings Lynn
TRING
BERKHAMSTED
HEMEL HEMPSTEAD
APSLEY
KINGS LANGLEY
ST ALBANS ABBEY
PARK STREET
HOW WOOD
BRICKET WOOD
GARSTON
WATFORD NORTH
WATFORD JUNCTION
WATFORD HIGH STREET
BUSHEY
CARPENDERS PARK
HATCH END
HEADSTONE LANE
HARROW & WEALDSTONE
KENTON
AYLESBURY VALE PARKWAY
AYLESBURY
STOKE MANDEVILLE
CHESHAM
WENDOVER
GREAT MISSENDEN
AMERSHAM
WATFORD
CHALFONT & LATIMER
CHORLEYWOOD
RICKMANSWORTH
CROXLEY
MOOR PARK
NORTHWOOD
NORTHWOOD HILLS
PINNER
NORTH HARROW
HARROW-ON-THE-HILL
SOUTH KENTON
NORTH WEMBLEY
WEMBLEY CENTRAL
STONEBRIDGE PARK
HARLESDEN
NORTHWICK PARK
PRESTON ROAD
WEMBLEY PARK
To East Croydon
WILLESDEN JUNCTION
KENSAL GREEN
QUEEN'S PARK
KILBURN HIGH ROAD
SOUTH HAMPSTEAD
FINCHLEY ROAD
EUSTON
MARYLEBONE
BAKER STREET
GREAT PORTLAND STREET
BEDFORD
FLITWICK
HARLINGTON
LEAGRAVE
LUTON
LUTON AIRPORT PARKWAY
HARPENDEN
ST ALBANS
RADLETT
ELSTREE & BOREHAMWOOD
MILL HILL BROADWAY
HENDON
CRICKLEWOOD
WEST HAMPSTEAD THAMESLINK
KENTISH TOWN
EUSTON SQUARE
ST PANCRAS INTERNATIONAL
KING'S CROSS
FARRINGDON
BARBICAN
To Sutton, Gatwick Aiport and Brighton
HUNTINGDON
ST NEOTS
SANDY
BIGGLESWADE
ARLESEY
HITCHIN
STEVENAGE
KNEBWORTH
WELWYN NORTH
WELWYN GARDEN CITY
HATFIELD
WELHAM GREEN
BROOKMANS PARK
POTTERS BAR
HADLEY WOOD
NEW BARNET
OAKLEIGH PARK
NEW SOUTHGATE
ASHWELL & MORDEN
BALDOCK
ROYSTON
MELDRETH
LETCHWORTH GARDEN CITY
WATTON-AT-STONE
HERTFORD NORTH
BAYFORD
CUFFLEY
CREWS HILL
GORDON HILL
ENFIELD CHASE
GRANGE PARK
WINCHMORE HILL
PALMERS GREEN
BOWES PARK
ALEXANDRA PALACE
HORNSEY
HARRINGAY
FINSBURY PARK
DRAYTON PARK
HIGHBURY & ISLINGTON
ESSEX ROAD
OLD STREET
MOORGATE
FOXTON
SHEPRETH
CAMBRIDGE
SHELFORD
WHITTLESFORD PARKWAY
GREAT CHESTERFORD
AUDLEY END
NEWPORT
ELSENHAM
STANSTED AIRPORT
STANSTED MOUNTFITCHET
BISHOP'S STORTFORD
SAWBRIDGEWORTH
HARLOW MILL
HARLOW TOWN
ROYDON
BROXBOURNE
CHESHUNT
WALTHAM CROSS
ENFIELD LOCK
BRIMSDOWN
PONDERS END
ANGEL ROAD
NORTHUMBERLAND PARK
TOTTENHAM HALE
HERTFORD EAST
WARE
ST MARGARETS
RYE HOUSE
THEOBALDS GROVE
TURKEY STREET
SOUTHBURY
EDMONTON GREEN
SILVER STREET
WHITE HART LANE
BRUCE GROVE
SEVEN SISTERS
STAMFORD HILL
STOKE NEWINGTON
RECTORY ROAD
CLAPTON
HACKNEY DOWNS
LONDON FIELDS
CAMBRIDGE HEATH
BETHNAL GREEN
LIVERPOOL STREET
LEA BRIDGE
STRATFORD
ALDGATE
Key to Operators
Greater Anglia
Caledonian Sleeper
Chiltern Railways
First Hull Trains
Great Northern
Thameslink Railway
London Northwestern Railway
London Overground
Metropolitan line
Southern
Virgin
Virgin East Coast
Interchange with London Underground Stations
Interchange with International Services

Page Deliberately Blank.

Appendix F

CrashMap Extract

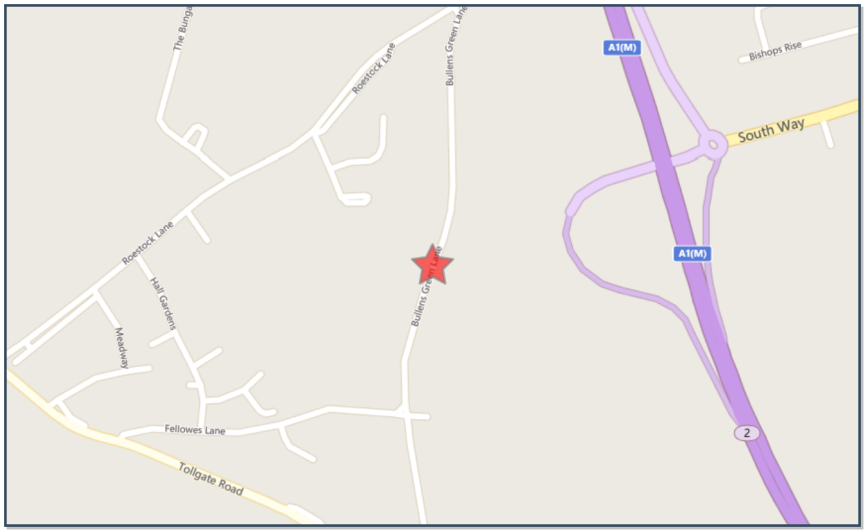
CrashMap Extract



crashmap.co.uk

Crash Date:	Wednesday, September 27, 2017	**Time of Crash:**	7:15:00 PM	**Crash Reference:**	**2017410228204**

Highest Injury Severity:	Serious	**Road Number:**	U0	**Number of Casualties:**	1
Highway Authority:	Hertfordshire			**Number of Vehicles:**	1
Local Authority:	Welwyn Hatfield Borough			**OS Grid Reference:**	521324 205953
Weather Description:	Raining without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	40				
Light Conditions:	Darkness: no street lighting				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



For more information about the data please visit: *www.crashmap.co.uk/home/Faq*
To subscribe to unlimited reports using CrashMap Pro visit *www.crashmap.co.uk/Home/Premium_Services*

powered by agilysis

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	11	Male	21 - 25	Vehicle proceeding normally along the carriageway, not on a bend	Front	Commuting to/from work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Pedestrian	Female	46 - 55	In carriageway, not crossing	Walking along in carriageway - back to traffic

Appendix G

TRICS Output

Woods Hardwick

Architecture | Engineering | Planning | Surveying

Woods Hardwick Ltd Goldington Road Bedford Licence No: 140301

Filtering Summary

Land Use	03/M	RESIDENTIAL/MIXED PRIVATE/AFFORDABLE HOU
Selected Trip Rate Calculation Parameter Range	9-200 DWELLS	
Actual Trip Rate Calculation Parameter Range	9-199 DWELLS	
Date Range	Minimum: 01/01/12	Maximum: 14/11/19
Parking Spaces Range	All Surveys Included	
Parking Spaces Per Dwelling Range:	All Surveys Included	
Bedrooms Per Dwelling Range:	All Surveys Included	
Percentage of dwellings privately owned:	All Surveys Included	
Days of the week selected	Monday	3
	Tuesday	4
	Wednesday	6
	Thursday	5
	Friday	9
Main Location Types selected	Suburban Area (PPS6 Out of Centre)	13
	Neighbourhood Centre (PPS6 Local Centre)	14
Population <1 Mile ranges selected	1,000 or Less	2
	1,001 to 5,000	10
	5,001 to 10,000	2
	10,001 to 15,000	3
	20,001 to 25,000	2
	25,001 to 50,000	8
Population <5 Mile ranges selected	5,001 to 25,000	1
	25,001 to 50,000	5
	50,001 to 75,000	2
	75,001 to 100,000	5
	100,001 to 125,000	3
	125,001 to 250,000	8
	250,001 to 500,000	2
	500,001 or More	1
Car Ownership <5 Mile ranges selected	0.6 to 1.0	2
	1.1 to 1.5	21
	1.6 to 2.0	4
PTAL Rating	No PTAL Present	27

Calculation Reference: AUDIT-140301-200603-0626

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : M - MIXED PRIVATE/AFFORDABLE HOUSING
VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	3 days
	HC	HAMPSHIRE	1 days
	SC	SURREY	3 days
	WS	WEST SUSSEX	7 days
03	SOUTH WEST		
	DC	DORSET	1 days
	SM	SOMERSET	1 days
04	EAST ANGLIA		
	NF	NORFOLK	6 days
05	EAST MIDLANDS		
	DS	DERBYSHIRE	1 days
06	WEST MIDLANDS		
	WK	WARWICKSHIRE	1 days
08	NORTH WEST		
	GM	GREATER MANCHESTER	1 days
09	NORTH		
	CB	CUMBRIA	1 days
	TW	TYNE & WEAR	1 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
Actual Range: 9 to 199 (units:)
Range Selected by User: 9 to 200 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/12 to 14/11/19

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

Selected survey days:

Monday	3 days
Tuesday	4 days
Wednesday	6 days
Thursday	5 days
Friday	9 days

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

Selected survey types:

Manual count	23 days
Directional ATC Count	4 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	13
Neighbourhood Centre (PPS6 Local Centre)	14

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

Selected Location Sub Categories:

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

Secondary Filtering selection:

Use Class:

C3	27 days

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

Population within 1 mile:

1,000 or Less	2 days
1,001 to 5,000	10 days
5,001 to 10,000	2 days
10,001 to 15,000	3 days
20,001 to 25,000	2 days
25,001 to 50,000	8 days

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

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	5 days
50,001 to 75,000	2 days
75,001 to 100,000	5 days
100,001 to 125,000	3 days
125,001 to 250,000	8 days
250,001 to 500,000	2 days
500,001 or More	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	2 days
1.1 to 1.5	21 days
1.6 to 2.0	4 days

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

Travel Plan:

Yes	18 days
No	9 days

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

PTAL Rating:

No PTAL Present	27 days

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

LIST OF SITES relevant to selection parameters

Site(1):	CB-03-M-04	Site area:	0.46 hect
Development Name:	SEMI-DETACHED & TERRACED	No of Dwellings:	20
Location:	CARLISLE	Housing density:	56
Postcode:	CA2 7BP	Total Bedrooms:	48
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	24/06/16
Sub-Location Type:	Residential Zone	Survey Day:	Friday
PTAL:	n/a	Parking Spaces:	15
Site(2):	DC-03-M-02	Site area:	0.71 hect
Development Name:	TERRACED & BUNGALOWS	No of Dwellings:	37
Location:	DORCHESTER	Housing density:	77
Postcode:	DT1 1NW	Total Bedrooms:	107
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	16/09/16
Sub-Location Type:	Residential Zone	Survey Day:	Friday
PTAL:	n/a	Parking Spaces:	72
Site(3):	DS-03-M-01	Site area:	0.78 hect
Development Name:	TERRACED/SEMI DETACHED	No of Dwellings:	32
Location:	DERBY	Housing density:	54
Postcode:	DE24 8JQ	Total Bedrooms:	78
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	21/10/14
Sub-Location Type:	Residential Zone	Survey Day:	Tuesday
PTAL:	n/a	Parking Spaces:	40
Site(4):	ES-03-M-05	Site area:	4.88 hect
Development Name:	HOUSES & FLATS	No of Dwellings:	138
Location:	NEAR UCKFIELD	Housing density:	61
Postcode:	TN22 3AP	Total Bedrooms:	454
Main Location Type:	Neighbourhood Centre (PPS6 Local Centre)	Survey Date:	30/06/14
Sub-Location Type:	Village	Survey Day:	Monday
PTAL:	n/a	Parking Spaces:	257
Site(5):	ES-03-M-09	Site area:	2.36 hect
Development Name:	DETACHED/SEMI-DETACHED	No of Dwellings:	16
Location:	NORTHIAM	Housing density:	7
Postcode:	TN31 6QQ	Total Bedrooms:	53
Main Location Type:	Neighbourhood Centre (PPS6 Local Centre)	Survey Date:	17/05/17
Sub-Location Type:	Village	Survey Day:	Wednesday
PTAL:	n/a	Parking Spaces:	27
Site(6):	ES-03-M-13	Site area:	5.00 hect
Development Name:	MIXED HOUSES	No of Dwellings:	66
Location:	WIVELSFIELD GREEN	Housing density:	31
Postcode:	RH17 7EW	Total Bedrooms:	213
Main Location Type:	Neighbourhood Centre (PPS6 Local Centre)	Survey Date:	22/06/18
Sub-Location Type:	Village	Survey Day:	Friday
PTAL:	n/a	Parking Spaces:	213
Site(7):	GM-03-M-01	Site area:	0.28 hect
Development Name:	TERRACED & FLATS	No of Dwellings:	9
Location:	ROCHDALE	Housing density:	47
Postcode:	OL12 9BX	Total Bedrooms:	14
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	25/11/14
Sub-Location Type:	Residential Zone	Survey Day:	Tuesday
PTAL:	n/a	Parking Spaces:	16
Site(8):	HC-03-M-05	Site area:	1.30 hect
Development Name:	HOUSES & FLATS	No of Dwellings:	62
Location:	SOUTHAMPTON	Housing density:	64
Postcode:	SO16 4GU	Total Bedrooms:	145
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	03/10/14
Sub-Location Type:	Residential Zone	Survey Day:	Friday
PTAL:	n/a	Parking Spaces:	93
Site(9):	NF-03-M-01	Site area:	7.39 hect
Development Name:	MIXED HOUSES & FLATS	No of Dwellings:	173
Location:	NEAR NORWICH	Housing density:	29
Postcode:	NR14 8FQ	Total Bedrooms:	521
Main Location Type:	Neighbourhood Centre (PPS6 Local Centre)	Survey Date:	20/09/19
Sub-Location Type:	Village	Survey Day:	Friday
PTAL:	n/a	Parking Spaces:	479
Site(10):	NF-03-M-05	Site area:	6.78 hect
Development Name:	MIXED HOUSES	No of Dwellings:	150
Location:	PORINGLAND	Housing density:	33
Postcode:	NR14 7TS	Total Bedrooms:	447
Main Location Type:	Neighbourhood Centre (PPS6 Local Centre)	Survey Date:	16/09/19
Sub-Location Type:	Village	Survey Day:	Monday
PTAL:	n/a	Parking Spaces:	325

LIST OF SITES relevant to selection parameters (Cont.)

Site(11):	NF-03-M-06	Site area:	7.30 hect
Development Name:	MIXED HOUSES	No of Dwellings:	120
Location:	HOVETON	Housing density:	20
Postcode:	NR12 8GP	Total Bedrooms:	331
Main Location Type:	Neighbourhood Centre (PPS6 Local Centre)	Survey Date:	20/09/19
Sub-Location Type:	Village	Survey Day:	Friday
PTAL:	n/a	Parking Spaces:	274
Site(12):	NF-03-M-09	Site area:	5.61 hect
Development Name:	MIXED HOUSES	No of Dwellings:	125
Location:	NEAR NORWICH	Housing density:	26
Postcode:	NR10 3FP	Total Bedrooms:	393
Main Location Type:	Neighbourhood Centre (PPS6 Local Centre)	Survey Date:	19/09/19
Sub-Location Type:	Village	Survey Day:	Thursday
PTAL:	n/a	Parking Spaces:	298
Site(13):	NF-03-M-11	Site area:	4.48 hect
Development Name:	MIXED HOUSES	No of Dwellings:	100
Location:	NEAR NORWICH	Housing density:	27
Postcode:	NR14 7UP	Total Bedrooms:	329
Main Location Type:	Neighbourhood Centre (PPS6 Local Centre)	Survey Date:	20/09/19
Sub-Location Type:	Village	Survey Day:	Friday
PTAL:	n/a	Parking Spaces:	257
Site(14):	NF-03-M-13	Site area:	2.48 hect
Development Name:	MIXED HOUSES	No of Dwellings:	75
Location:	NEAR NORWICH	Housing density:	32
Postcode:	NR13 5GA	Total Bedrooms:	221
Main Location Type:	Neighbourhood Centre (PPS6 Local Centre)	Survey Date:	20/09/19
Sub-Location Type:	Village	Survey Day:	Friday
PTAL:	n/a	Parking Spaces:	162
Site(15):	SC-03-M-05	Site area:	1.10 hect
Development Name:	HOUSES & FLATS	No of Dwellings:	52
Location:	STAINES	Housing density:	55
Postcode:	TW19 7AA	Total Bedrooms:	114
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	19/11/12
Sub-Location Type:	Residential Zone	Survey Day:	Monday
PTAL:	n/a	Parking Spaces:	66
Site(16):	SC-03-M-07	Site area:	4.90 hect
Development Name:	HOUSES/FLATS	No of Dwellings:	199
Location:	GUILDFORD	Housing density:	50
Postcode:	GU1 2LP	Total Bedrooms:	555
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	24/10/13
Sub-Location Type:	Residential Zone	Survey Day:	Thursday
PTAL:	n/a	Parking Spaces:	268
Site(17):	SC-03-M-08	Site area:	10.68 hect
Development Name:	MIXED HOUSES & FLATS	No of Dwellings:	107
Location:	LONGCROSS	Housing density:	29
Postcode:	KT16 0BZ	Total Bedrooms:	313
Main Location Type:	Neighbourhood Centre (PPS6 Local Centre)	Survey Date:	12/11/19
Sub-Location Type:	Village	Survey Day:	Tuesday
PTAL:	n/a	Parking Spaces:	273
Site(18):	SM-03-M-01	Site area:	5.09 hect
Development Name:	DETACHED & TERRACED HOUSES	No of Dwellings:	135
Location:	TAUNTON	Housing density:	40
Postcode:	TA2 8XB	Total Bedrooms:	419
Main Location Type:	Neighbourhood Centre (PPS6 Local Centre)	Survey Date:	26/09/18
Sub-Location Type:	Village	Survey Day:	Wednesday
PTAL:	n/a	Parking Spaces:	339
Site(19):	TW-03-M-02	Site area:	2.07 hect
Development Name:	MIXED HOUSES & FLATS	No of Dwellings:	108
Location:	NEWCASTLE UPON TYNE	Housing density:	70
Postcode:	NE7 7FS	Total Bedrooms:	271
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	19/10/18
Sub-Location Type:	Residential Zone	Survey Day:	Friday
PTAL:	n/a	Parking Spaces:	161
Site(20):	WK-03-M-03	Site area:	5.50 hect
Development Name:	MIXED HOUSES	No of Dwellings:	124
Location:	LONG ITCHINGTON	Housing density:	28
Postcode:	CV47 9QP	Total Bedrooms:	359
Main Location Type:	Neighbourhood Centre (PPS6 Local Centre)	Survey Date:	27/06/18
Sub-Location Type:	Village	Survey Day:	Wednesday
PTAL:	n/a	Parking Spaces:	724

LIST OF SITES relevant to selection parameters (Cont.)

Site(21):	WS-03-M-10	Site area:	4.00 hect
Development Name:	MIXED FLATS & HOUSES	No of Dwellings:	194
Location:	CHICHESTER	Housing density:	78
Postcode:	PO19 6BU	Total Bedrooms:	540
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	23/03/16
Sub-Location Type:	Residential Zone	Survey Day:	Wednesday
PTAL:	n/a	Parking Spaces:	273
Site(22):	WS-03-M-12	Site area:	3.74 hect
Development Name:	HOUSES & FLATS	No of Dwellings:	192
Location:	SHOREHAM BY SEA	Housing density:	89
Postcode:	BN43 6TQ	Total Bedrooms:	466
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	27/04/16
Sub-Location Type:	Residential Zone	Survey Day:	Wednesday
PTAL:	n/a	Parking Spaces:	282
Site(23):	WS-03-M-13	Site area:	0.64 hect
Development Name:	TERRACED & FLATS	No of Dwellings:	23
Location:	WORTHING	Housing density:	66
Postcode:	BN15 9NY	Total Bedrooms:	58
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	21/06/16
Sub-Location Type:	Residential Zone	Survey Day:	Tuesday
PTAL:	n/a	Parking Spaces:	32
Site(24):	WS-03-M-17	Site area:	3.96 hect
Development Name:	MIXED HOUSES & FLATS	No of Dwellings:	99
Location:	CHICHESTER	Housing density:	54
Postcode:	PO18 0PB	Total Bedrooms:	267
Main Location Type:	Neighbourhood Centre (PPS6 Local Centre)	Survey Date:	03/10/18
Sub-Location Type:	Village	Survey Day:	Wednesday
PTAL:	n/a	Parking Spaces:	165
Site(25):	WS-03-M-18	Site area:	2.16 hect
Development Name:	MIXED HOUSES & FLATS	No of Dwellings:	86
Location:	BOGNOR REGIS	Housing density:	62
Postcode:	PO21 5GB	Total Bedrooms:	233
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	17/10/19
Sub-Location Type:	Residential Zone	Survey Day:	Thursday
PTAL:	n/a	Parking Spaces:	168
Site(26):	WS-03-M-19	Site area:	0.75 hect
Development Name:	MIXED HOUSES & FLATS	No of Dwellings:	32
Location:	BOGNOR REGIS	Housing density:	107
Postcode:	PO21 5GA	Total Bedrooms:	73
Main Location Type:	Suburban Area (PPS6 Out of Centre)	Survey Date:	17/10/19
Sub-Location Type:	Residential Zone	Survey Day:	Thursday
PTAL:	n/a	Parking Spaces:	56
Site(27):	WS-03-M-20	Site area:	5.46 hect
Development Name:	MIXED HOUSES & FLATS	No of Dwellings:	121
Location:	HORSHAM	Housing density:	26
Postcode:	RH12 3XE	Total Bedrooms:	352
Main Location Type:	Neighbourhood Centre (PPS6 Local Centre)	Survey Date:	24/10/19
Sub-Location Type:	Residential Zone	Survey Day:	Thursday
PTAL:	n/a	Parking Spaces:	306

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING
VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	27	96	0.083	27	96	0.281	27	96	0.364
08:00 - 09:00	27	96	0.111	27	96	0.360	27	96	0.471
09:00 - 10:00	27	96	0.115	27	96	0.181	27	96	0.296
10:00 - 11:00	27	96	0.116	27	96	0.140	27	96	0.256
11:00 - 12:00	27	96	0.130	27	96	0.138	27	96	0.268
12:00 - 13:00	27	96	0.128	27	96	0.129	27	96	0.257
13:00 - 14:00	27	96	0.146	27	96	0.131	27	96	0.277
14:00 - 15:00	27	96	0.145	27	96	0.156	27	96	0.301
15:00 - 16:00	27	96	0.234	27	96	0.153	27	96	0.387
16:00 - 17:00	27	96	0.252	27	96	0.150	27	96	0.402
17:00 - 18:00	27	96	0.328	27	96	0.159	27	96	0.487
18:00 - 19:00	27	96	0.284	27	96	0.158	27	96	0.442
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.072			2.136			4.208

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

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

Parameter summary

Trip rate parameter range selected:	9 - 199 (units:)
Survey date date range:	01/01/12 - 14/11/19
Number of weekdays (Monday-Friday):	43
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	6
Surveys manually removed from selection:	0

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

Page Deliberately Blank.

Woods Hardwick

Architecture | Engineering | Planning | Surveying

BEDFORD : HEAD OFFICE
15-17 Goldington Road
Bedford MK40 3NH
T : +44 (0) 1234 268862

BIRMINGHAM
Fort Dunlop, Fort Parkway
Birmingham B24 9FE
T : +44 (0) 0121 6297784

ONLINE
mail@woodshardwick.com
woodshardwick.com