

Technical Note 6 – Sustainable Accessibility Mapping & Analysis

5th December 2014

Introduction

A meeting was held at Epping Forest District Council offices in Epping on 30th October 2014 to discuss the sustainable travel element of a transport evidence base for the District's Local Plan. A brief of work was subsequently drawn up to undertake the following:

- Map the location of Local Plan housing sites in relation to the public transport network (road and rail), and their proximity to local services including schools and GP surgeries
- Use mapping software to determine the level of accessibility via non-car travel modes from Local Plan housing sites and local services

The study is intended to provide Epping Forest District Council (EFDC) and Essex County Council (ECC) with insight into the level of sustainable travel accessibility attributed to Local Plan development sites in Epping Forest District. This Technical Note 6 presents the mapping and RAG table appraisal undertaken, and also documents the data collection process and assumptions made in the accessibility analysis.

Mapping

The following data was mapped to present an overview of the location of Local Plan development sites in the district and their proximity to public services and the sustainable transport network (walking, cycling, bus and rail):

- SLAA 2013 Local Plan development site areas
- The bus network, bus stop locations and service frequencies (thematically mapped)
 - Weekday (Wednesday): 0700-0800, 0800-0900, 1700-1800, 1800-1900
 - Saturday: 1300-1400
- The National Rail and London Underground network and station locations
- The National Cycle Network and local cycle network (Harlow)
- Public Rights of Way (PRoW) and bridleways
- Location of nursery, infant/primary/secondary schools
- Location of GP surgeries

Data Collection

SLAA 2013 Local Plan development data was obtained for the construction of the Epping Spreadsheet Model (See Technical Note 2 – Spreadsheet model development, Jan 2014) and associated mapping used was incorporated into this latest study. Site boundaries are acknowledged as being flexible, although the identification of general site locations should suffice for this study.

June 2014 service frequency data across the district's bus route network was obtained from Essex County Council's Passenger Transport team. The data is link-based and covers two-way bus service frequencies per hour surveyed across 7 consecutive days.

The location of bus stops in Epping Forest District was determined using a 2014 National Public Transport Access Nodes (NaPTAN) dataset obtained from the data.gov.uk website: <http://data.gov.uk/dataset/naptan>

Where available, nursery/school/GP data used in the accessibility mapping was initially extracted from an Essex Highways 2008 database built for use with previous transport studies. The data was then cross-referenced and updated where necessary using up-to-date 2014 datasets from the following sources:

- Nursery schools and day care centres in Epping Forest District - Used 2014 directory taken from the daynurseries.co.uk website: <http://www.daynurseries.co.uk>
- Infant and Junior schools (non-private) in Epping Forest District – Existing 2008 data updated using October 2014 information provided on the Schools Web Directory website: <http://www.schoolswedirectory.co.uk>
- Secondary schools (non-private) in Epping Forest District – Existing 2008 data updated using October 2014 information provided on the Schools Web Directory website: <http://www.schoolswedirectory.co.uk>
- GP surgeries (non-private) in Epping Forest District – using August 2014 database taken from the Health & Social Care Information Centre website: <http://systems.hscic.gov.uk/data/ods/datadownloads/index>

RAG Analysis

In support of the mapping, a Red Amber Green table was put together to broadly assess the level of accessibility by non-car modes at each of the Local Plan development sites. Whilst specific distance and service frequency values were documented, the RAG system made it possible to broadly compare all Local Plan sites amongst each other.

Each Local Plan site was assessed under the following criteria:

1) Distance to nearest bus stop

- The walking distance from the centre of the proposed development to the nearest bus stop using existing footpaths (not crow-fly distance)
- Categories:
 - Red = More than 400 metres
 - Amber = Between 200m and 400m
 - Green = Less than 200m

2) Frequency of buses serving nearest bus stop

- The total number of buses accessing the bus stop from any given route – average taken of the morning and evening peak hours from ECC's link-based bus frequency data.
- Categories:
 - Red = 0-1 buses per hour
 - Amber = 2 buses per hour
 - Green = 3 or more buses per hour

3) Distance to nearest rail/tube station

- The distance from the centre of the proposed development to the nearest rail/tube station using existing road network (not crow-fly distance)
- Categories:
 - Red = More than 2km (driving / bus distance)
 - Amber = Between 400m and 2km (cycling distance)
 - Green = Less than 400m (walking distance)

4) Bus service frequency to rail/tube stations

- The total number of buses accessing the bus stop from any given route that also serve the rail/tube station – using ECC's Cartogold web-based mapping tool: [http://www.cartogold.co.uk/Essex Public Transport/](http://www.cartogold.co.uk/Essex_Public_Transport/)
- Categories:
 - Red = 0-1 buses per hour
 - Amber = 2 buses per hour
 - Green = 3 or more buses per hour

5) Accessibility of nearest tube/rail station via bus

- The level of accessibility of nearest tube/rail station via bus based on: a) Walking distance from LP site to nearest bus stop accommodating service to tube/rail station + b) Walking distance from egress bus stop to tube/rail station + c) Frequency of bus service.
Walking distance and bus frequency categories as stated above.
Combination of 3 categories: Red = 1 point, Amber = 2 points, Green = 3 points.
- Overall Accessibility:
 - Red = 0-5 points (0 = no service)
 - Amber = 6-7 points
 - Green = 8-9 points

6) Distance to nearest nursery/day care centre

- The distance from the centre of the proposed development to the nearest nursery/day care centre using existing road network (not crow-fly distance)
- Categories:
 - Red = More than 2km (driving / bus distance)
 - Amber = Between 400m and 2km (cycling distance)
 - Green = Less than 400m (walking distance)

7) Accessibility of nearest nursery/day care centre via bus

- The level of accessibility of nearest nursery/day care centre via bus based on: a) Walking distance from LP site to nearest bus stop accommodating service to nursery/day care centre + b) Walking distance from egress bus stop to nursery/day care centre + c) Frequency of bus service.

Walking distance and bus frequency categories as stated above.

Combination of 3 categories: Red = 1 point, Amber = 2 points, Green = 3 points.

- Overall Accessibility: Red = 0-5 points (0 = no service)
 Amber = 6-7 points
 Green = 8-9 points

8) Distance to nearest infant/primary school

- The distance from the centre of the proposed development to the nearest non-private infant/primary school using existing road network (not crow-fly distance)

- Categories: Red = More than 2km (driving / bus distance)
 Amber = Between 400m and 2km (cycling distance)
 Green = Less than 400m (walking distance)

9) Accessibility of nearest infant/primary school via bus

- The level of accessibility of nearest non-private infant/primary school via bus based on: a) Walking distance from LP site to nearest bus stop accommodating service to infant/primary school + b) Walking distance from egress bus stop to infant/primary school + c) Frequency of bus service.

Walking distance and bus frequency categories as stated above.

Combination of 3 categories: Red = 1 point, Amber = 2 points, Green = 3 points.

- Overall Accessibility: Red = 0-5 points (0 = no service)
 Amber = 6-7 points
 Green = 8-9 points

10) Distance to nearest secondary school

- The distance from the centre of the proposed development to the nearest state secondary school using existing road network (not crow-fly distance)

- Categories: Red = More than 2km (driving / bus distance)
 Amber = Between 400m and 2km (cycling distance)
 Green = Less than 400m (walking distance)

11) Accessibility of nearest secondary school via bus

- The level of accessibility of nearest state secondary school via bus based on: a) Walking distance from LP site to nearest bus stop accommodating service to secondary school + b) Walking distance from egress bus stop to secondary school + c) Frequency of bus service.

Walking distance and bus frequency categories as stated above.

Combination of 3 categories: Red = 1 point, Amber = 2 points, Green = 3 points.

- Overall Accessibility: Red = 0-5 points (0 = no service)
 Amber = 6-7 points
 Green = 8-9 points

12) Distance to nearest GP surgery

- The distance from the centre of the proposed development to the nearest NHS GP surgery using existing road network (not crow-fly distance)

- Categories: Red = More than 2km (driving / bus distance)
 Amber = Between 400m and 2km (cycling distance)
 Green = Less than 400m (walking distance)

13) Accessibility of nearest GP surgery via bus

- The level of accessibility of nearest GP surgery via bus based on: a) Walking distance from LP site to nearest bus stop accommodating service to GP surgery + b) Walking distance from egress bus stop to GP surgery + c) Frequency of bus service.

Walking distance and bus frequency categories as stated above.

Combination of 3 categories: Red = 1 point, Amber = 2 points, Green = 3 points.

- Overall Accessibility: Red = 0-5 points (0 = no service)
 Amber = 6-7 points
 Green = 8-9 points

Accessibility of Epping LP Sites

Site Ref	Location	Distance to nearest bus stop (m)	Frequency of buses serving nearest bus stop	Distance to nearest rail/tube station (m)	Bus service frequency to rail/tube station	Accessibility of nearest tube station via bus	Distance to nearest nursery/pre-school (m)	Accessibility of nearest nursery/pre-school via bus	Distance to nearest infant/primary school (m)	Accessibility of nearest infant/primary school via bus	Distance to nearest secondary school (m)	Accessibility of nearest secondary school via bus	Distance to nearest GP surgery (m)	Accessibility of nearest GP surgery via bus
EPP - 1	St. John's Road	125	7	725	7	9	760	8	470	-	800	-	450	9
EPP - 2	Nicholl Road	150	6	630	6	9	990	8	840	0	700	-	640	9
EPP - 3	Centre Drive	100	2	440	-	-	1310	8	1090	0	1140	0	920	9
EPP - 4	Bower Terrace	100	0	350	-	-	1650	6	1500	6	1600	5	1300	7
EPP - A	Stonards Hill (S)	500	7	1050	7	7	650	6	1250	0	1400	0	550	-
EPP - B	Stonards Hill (N)	720	7	1800	7	7	650	-	1750	0	2000	0	900	-
EPP - C	Thornwood Road	760	7	2200	7	7	800	-	1150	0	1650	0	1000	-
EPP - D	B181 Lindsey Street / B182 Bury Lane	550	0	1800	0	0	1550	0	550	-	1150	0	1500	0
EPP - E	Theydon Place / Madells	550	1	1250	1	5	1650	6	1300	0	800	-	1200	7
EPP - F	Ivy Chimneys Road	450	3	1600	3	7	2500	6	300	-	1650	0	2000	7
EPP - G	Brook Road	650	0	1100	1	5	2500	4	850	-	2200	0	2250	5
EPP - H	Bower Hill	350	0	500	-	-	1850	5	1500	6	1750	4	1400	5

Table 1.1 – RAG table illustrating sustainable accessibility of Epping LP Sites

Most Local Plan development sites in Epping have access to health, education and rail services – including a secondary school and Underground rail station – within a distance of 2km.

Developments in the centre and north east of Epping are well served by a regular bus service to the rail station. However, the larger development sites on the periphery of the town are less accessible by bus. Sites such as EPP-D for example, may benefit from a regular bus service providing connectivity to the town centre and rail station to encourage uptake of sustainable travel modes.

The main secondary school in Epping – St. John's – is not served by a regular bus service, but is located within a reasonable cycling distance of most Local Plan development sites. It may therefore benefit from a more defined cycle network providing connectivity with the town centre and the larger proposed development sites.

Infant and primary schools in Epping are also located a distance away from regular bus service routes. Development sites such as EPP-F and EPP-1, located within reasonable walking distance, will therefore likely have the lowest uptake of private car use for the 'school run'.

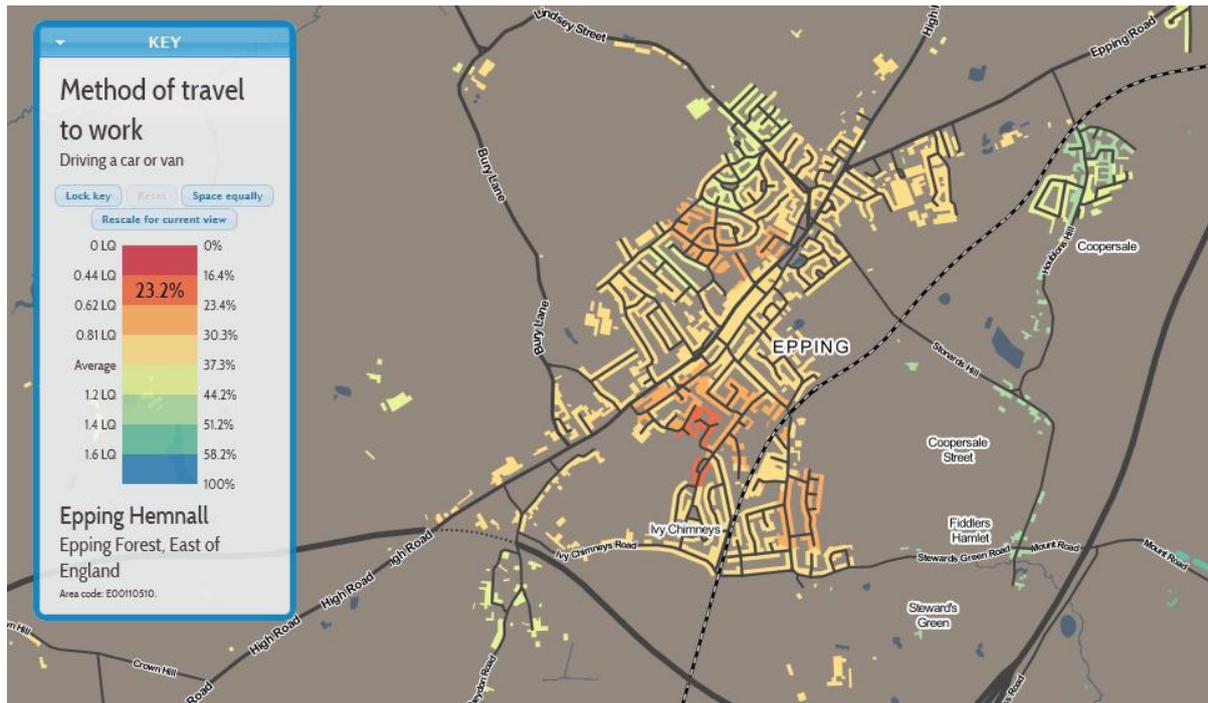


Figure 1.1 – Thematic plot of 2011 Census JTW data in Epping (plot produced using mapping software on the DataShine Census website: <http://datashine.org.uk>)

To support the RAG analysis, 2011 Census Journey to Work data has been used to determine the level of car use of existing residents in the towns and villages in Epping Forest. Whilst, there is no suggestion of a direct correlation between car use and sustainable travel uptake, analysis of Census data determines there to be a general percentage reduction in car use in areas accessible by rail, and a higher than average use of cars/vans in rural areas with limited accessibility to public services.

Without intervention (e.g. the use of travel planning initiatives) it would not be unreasonable to assume that residents living on Local Plan housing sites will adopt the same methods of travel to work as residents living in established developments in the immediate vicinity.

2011 Census Journey to Work data reveals that the Epping Hemnall output area – close to where LP site EPP-E is proposed, and within walking distance of the rail station - has the lowest percentage car/van use in Epping at 23%. The typical value for the immediate area surrounding Epping rail station is 30%. This compares to a national average of 37%.

Areas of Epping that are served by a regular bus service are shown to have car/van use of around 35% for journeys to work – which is slightly lower than the national average. The highest value is 45% in Coopersale, and this is largely representative of areas of Epping Forest that are not located in urban centres and/or close to Underground stations.

Accessibility of North Weald & Ongar LP Sites

Site Ref	Location	Distance to nearest bus stop (m)	Frequency of buses serving nearest bus stop	Distance to nearest rail/tube station (m)	Bus service frequency to rail/tube station	Accessibility of nearest tube station via bus	Distance to nearest nursery/pre-school (m)	Accessibility of nearest nursery/pre-school via bus	Distance to nearest infant/primary school (m)	Accessibility of nearest infant/primary school via bus	Distance to nearest secondary school (m)	Accessibility of nearest secondary school via bus	Distance to nearest GP surgery (m)	Accessibility of nearest GP surgery via bus
NWA - A	North Weald Airfield A	650	3	4300	3	7	1750	0	3500	6	4300	5	2400	7
NWA - B	North Weald Airfield B	250	3	4650	3	8	2150	0	2350	7	4650	6	1460	8
NWA - C	North Weald Airfield C	720	3	4000	3	7	1825	0	2750	6	4000	5	1740	7
NWA - D	North Weald Airfield D	800	3	5600	3	7	830	0	2850	6	5600	5	2100	7
NWB - 1	B181 Epping Road (North)	270	3	4450	3	8	1940	0	2450	7	4550	6	1230	8
NWB - 2	B181 Epping Road (South)	280	3	4400	3	8	1900	0	2400	7	4500	6	1200	8
NWB - 3	Station Road	160	3	4900	3	9	2450	0	1820	8	5000	7	720	9
NWB - A	Vicarage Lane West	650	3	6600	3	7	260	-	390	-	6575	5	1270	7
NWB - B	Vicarage Lane East	400	4	7000	3	8	800	0	600	-	7000	6	1800	8
NWB - 4	Land SW of Blakes Golf Club	920	3	6900	3	7	2300	0	1300	0	7000	5	1500	-
ONG - 1	High Street	120	8	12450	3	9	500	-	875	9	12550	8	500	9
ONG - A	B184 Fyfield Road (NE Ongar)	800	8	12350	3	7	1200	0	1200	0	12450	6	425	-
ONG - D	A128 Brentwood Road / Stondon Road	690	8	13450	3	7	1300	7	985	0	13450	7	1300	7
ONG - E	Stanford Rivers Road	800	8	13550	3	7	750	-	525	-	13650	6	1500	5
ONG - F	A414 Epping Road (West Ongar)	500	8	12700	3	7	550	-	800	-	12800	6	700	-
ONG - G	B184 Fyfield Road (NW Ongar)	900	8	12350	3	7	900	-	1100	-	12450	6	270	-

Table 1.2 – RAG table illustrating sustainable accessibility of North Weald & Ongar LP Sites

Local Plan development sites proposed on the airfield west of North Weald and on land to the south of Ongar would be located the furthest away from existing local health and education facilities. For all development sites, the nearest secondary school and rail station is located in Epping.

However, both villages are served by frequent bus services including a half-hourly service (339) that routes between Ongar, North Weald and Epping. It can be presumed that the length of bus journey for commuters to Epping rail station would make public transport less prohibitive from sites in North Weald than from sites in Ongar.

The location of nurseries in North Weald is such that most will unlikely be accessed by sustainable modes of travel from the development sites. In Ongar, most developments are located within a kilometre of the nearest nursery / day care centre – a distance similar to that of the nearest bus stop. Thus the practicality of using public transport is questionable in this instance.

The primary school in North Weald is located to the north east of the village. Therefore, many proposed development sites to the west – particularly on the airfield – would not be within a reasonable walking or cycling distance. Nevertheless, a frequent bus service running through

North Weald, offers a reasonable level of public transport access to the primary school. In Ongar, the infant/primary school located to the south of Ongar is located away from the main bus route through the town, but would be located within walking distance of a proportion of houses located on the ONG-E and ONG-F development sites. The infant/primary school to the north of Ongar is not accessible via a direct bus service from the development sites in the north, but could be deemed within walking distance of a proportion of houses on the ONG-F development site.

GP surgeries are located in the centre of North Weald and Ongar and are therefore afforded a reasonable level of accessibility by bus – although few are within a reasonable walking distance.

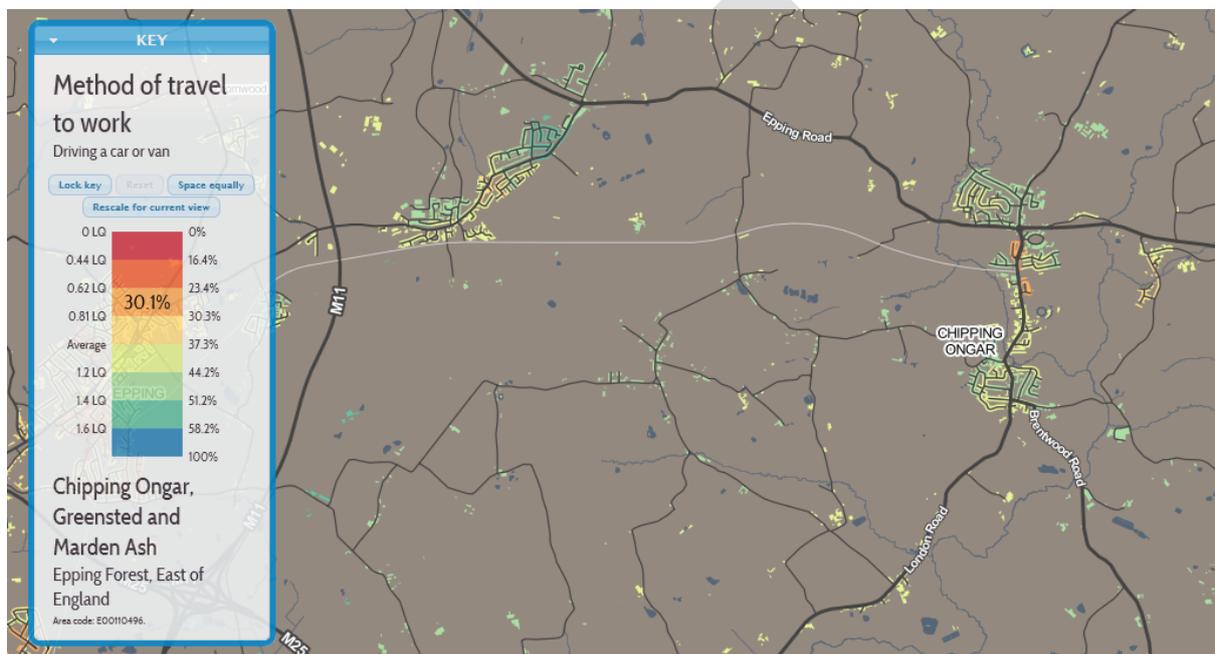


Figure 1.2 – Thematic plot of 2011 Census JTW data in North Weald & Ongar (plot produced using mapping software on the DataShine Census website: <http://datashine.org.uk>)

2011 Census Journey to Work data reveals that the lowest percentage car/van use in North Weald and Ongar is 30% in an area immediately north of Ongar town centre. The highest percentage is 56% in the north east of North Weald. Overall, the typical percentage of North Weald and Ongar residents travelling to work by car or van is around 45% with the national average set at 37%.

Accessibility of Waltham Abbey LP Sites

Site Ref	Location	Distance to nearest bus stop (m)	Frequency of buses serving nearest bus stop	Distance to nearest rail/tube station (m)	Bus service frequency to rail/tube station	Accessibility of nearest tube station via bus	Distance to nearest nursery/pre-school (m)	Accessibility of nearest nursery/pre-school via bus	Distance to nearest infant/primary school (m)	Accessibility of nearest infant/primary school via bus	Distance to nearest secondary school (m)	Accessibility of nearest secondary school via bus	Distance to nearest GP surgery (m)	Accessibility of nearest GP surgery via bus
WAL - 1	Highbridge Street / Quaker Lane	100	7	2200	5	9	200	-	700	-	1200	9	70	-
WAL - 2	Powdermill Way	600	4	1900	4	7	1400	7	2000	5	2750	7	1500	7
WAL - 3	Mason Close	180	3	3600	3	9	1300	7	380	-	1300	7	350	-
WAL - 4	Broomstick Hall Road	230	3	3300	3	8	90	-	800	-	90	-	800	8
WAL - A	Honey Lane / M25	320	3	4050	3	8	1750	6	575	-	1750	6	950	8
WAL - B	Old Shire Lane / Upshire Road	500	3	4950	3	7	2600	6	700	-	2600	6	950	-
WAL - C	Honey Lane / Woodgreen Road	550	3	5100	3	7	2700	6	600	-	2700	6	1100	-
WAL - E	Paternoster Hill / Pick Hill	225	2	2850	2	7	900	7	650	-	900	7	1400	7
WAL - F	Parklands	260	2	3700	2	7	600	7	1300	-	600	7	1400	7
WAL - G	Dowding Way	850	1	3600	0	0	1600	5	2500	0	2600	0	1300	5

Table 1.3 – RAG table illustrating sustainable accessibility of Waltham Abbey LP Sites

The majority of Local Plan sites proposed in Waltham Abbey are located on large green-field sites on the periphery of the town. Sites in the centre such as WAL-1, WAL-3 and WAL-4 are therefore shown to have noticeably better access to health and education facilities via sustainable travel modes (walking, cycling and bus).

The bus network in Waltham Abbey is of sufficient coverage that most development sites – including those on the periphery – are located within walking distance of a nearby bus route. Service frequencies are typically at least two an hour, providing a reasonable level of public transport connectivity between most development sites and local services – including the rail station at Waltham Cross and the King Harold Academy (secondary school) on Broomstick Hall Road.

Due to the distance, a bus remains the only sustainable travel option for access to Waltham Cross rail station from all LP sites in Waltham Abbey. Similarly, the majority of development sites located on the edge of Waltham Abbey are not within a reasonable walking distance of local nurseries, GP surgeries or the secondary school – all of which are more centrally located.

There is, however, a spread of infant/primary schools in Waltham Abbey. Most development sites are located within a kilometre of a school, and a proportion of proposed housing will likely be within walking distance.

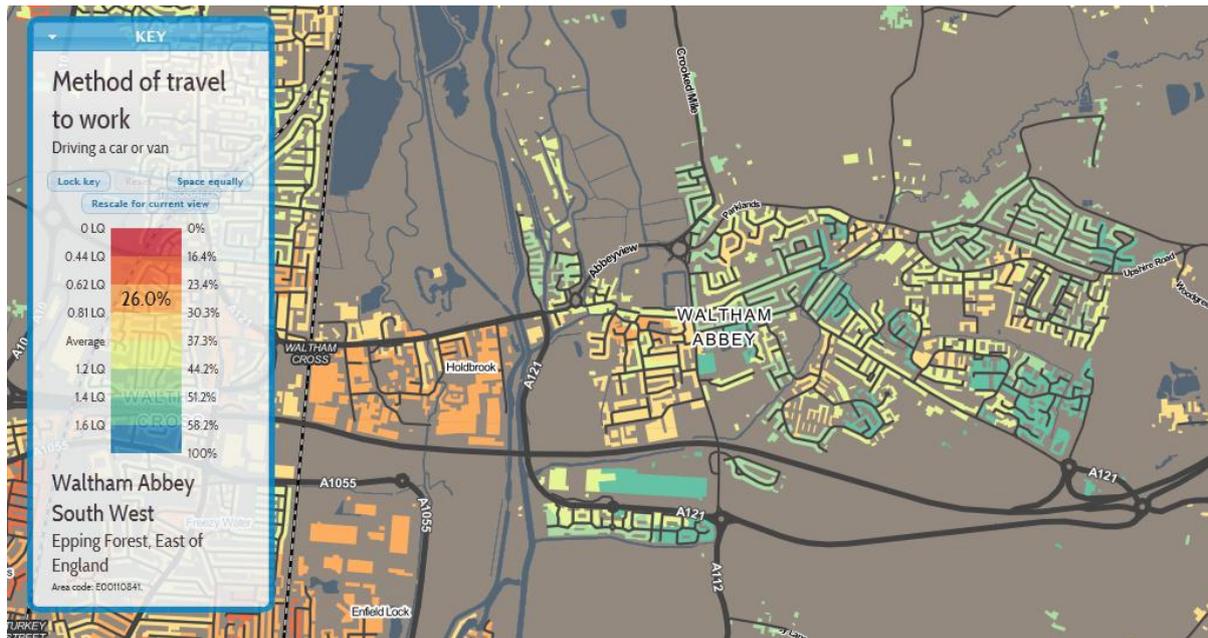


Figure 1.3 – Thematic plot of 2011 Census JTW data in Waltham Abbey (plot produced using mapping software on the DataShine Census website: <http://datashine.org.uk>)

2011 Census Journey to Work data reveals that the lowest percentage car/van use in Waltham Abbey is 26% in an area close to the town centre. The highest percentage is 56% on the south east edge of the town in closest proximity to Junction 26 of the M25. Overall, the typical percentage of Waltham Abbey residents travelling to work by car or van is around 45% with the national average set at 37%.

Accessibility of Loughton & Epping Forest south LP Sites

Site Ref	Location	Distance to nearest bus stop (m)	Frequency of buses serving nearest bus stop	Distance to nearest rail/tube station (m)	Bus service frequency to rail/tube station	Accessibility of nearest tube station via bus	Distance to nearest nursery/pre-school (m)	Accessibility of nearest nursery/pre-school via bus	Distance to nearest infant/primary school (m)	Accessibility of nearest infant/primary school via bus	Distance to nearest secondary school (m)	Accessibility of nearest secondary school via bus	Distance to nearest GP surgery (m)	Accessibility of nearest GP surgery via bus
BKH - 1	Powell Road	400	10	870	1	6	880	6	740	6	2750	6	500	6
BKH - 2	Station Way	210	2	50	-	-	1130	5	1340	5	4000	0	1500	6
CHG - 1	Hainault Road (Small)	175	3	225	-	-	1680	9	1380	0	1310	8	1570	9
CHG - B	Vicarage Lane	725	2	1190	-	-	2800	7	50	-	2140	6	2620	7
CHG - D	Hainault Road (Large)	575	2	850	-	-	2450	7	1670	0	1820	6	2260	7
LOU - 1	Clay's Lane	580	7	2500	6	7	1600	7	1200	5	1200	5	1000	6
LOU - 10	Oakwood Hill	20	1	920	1	7	650	7	800	6	1700	7	1700	7
LOU - 11	Albion Hill	380	9	1200	4	8	875	8	1950	8	1250	8	600	-
LOU - 2	Langston Road (North)	1450	1	1550	-	-	2700	5	2800	5	2300	5	2200	6
LOU - 3	Langston Road / Oakwood Hill	550	1	350	-	-	1850	5	1950	5	2450	5	1350	6
LOU - 4	Langston Road (NE)	1000	1	800	-	-	2300	5	2400	5	2900	5	1800	6
LOU - 5	Langston Road (East)	750	1	650	-	-	2150	5	3100	5	2750	5	1650	6
LOU - 6	Vere Road	170	10	450	-	-	1500	7	150	-	1500	7	650	-
LOU - 7	Chigwell Lane / The Broadway	25	1	285	-	-	1700	7	370	-	1700	9	400	-
LOU - 8	Chigwell Lane	45	11	200	-	-	1800	7	300	-	1800	7	500	-
LOU - 9	Torrington Drive	40	6	325	-	-	1750	7	420	-	1750	7	900	-

Table 1.4 – RAG table illustrating sustainable accessibility of Loughton and Epping Forest south LP Sites

Most Local Plan development sites in Loughton and settlements in the south of Epping Forest District (Buckhurst Hill and Chigwell) are located in close proximity to stations on the London Underground Central Line, making travel to/from the stations by bus services largely redundant. Health and education facilities would appear to be more accessible by sustainable modes from the proposed LP housing sites in Loughton than those in Chigwell and Buckhurst Hill.

It should be noted that development sites LOU-2, LOU-3, LOU-4 and LOU-5 are currently allocated for business use – meaning that access to schools and GP surgeries is unlikely to be as relevant as for housing sites. Any consideration given to expanding bus services to the sites south east of Loughton would likely be dependent on the type of business ultimately proposed.

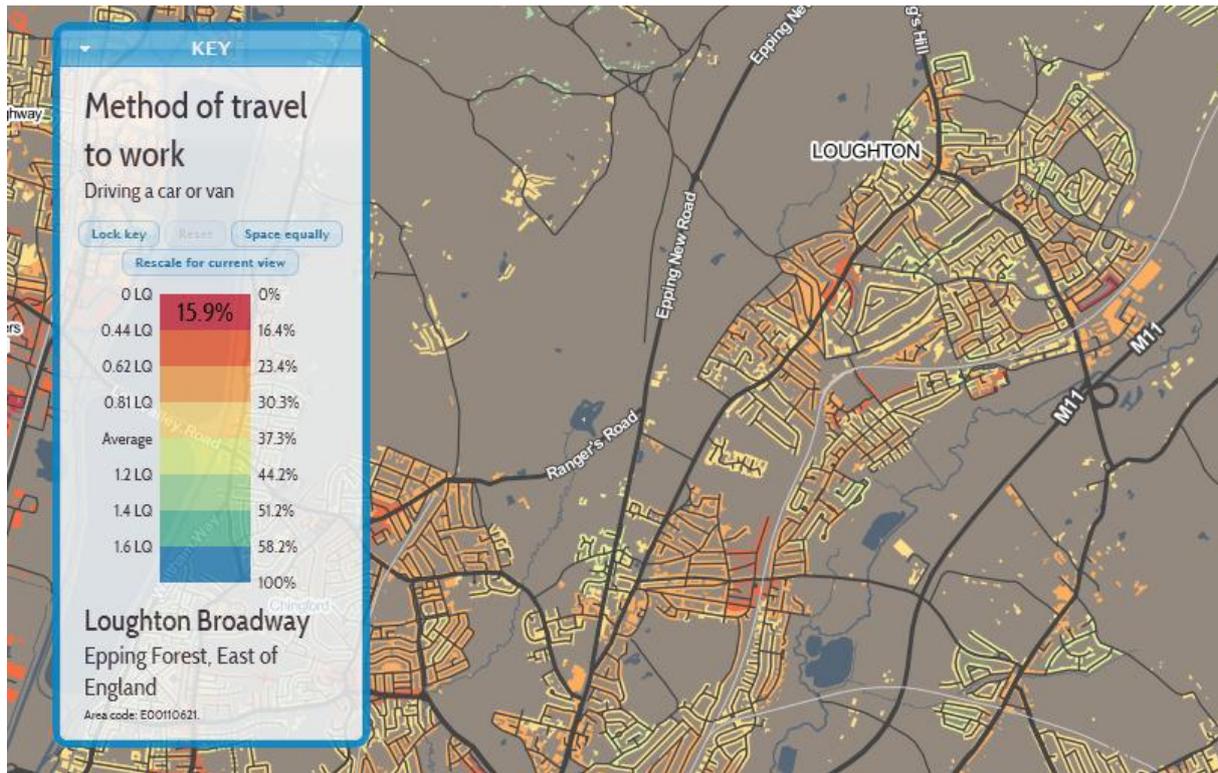


Figure 1.4 – Thematic plot of 2011 Census JTW data in Loughton and Epping Forest south (plot produced using mapping software on the DataShine Census website: <http://datashine.org.uk>)

2011 Census Journey to Work data reveals that the lowest percentage car/van use in Epping Forest south is 16% at Loughton Broadway, close to the Underground rail station. The highest percentage is 41% in Chigwell. Overall, a typical percentage for the area of residents travelling to work by car or van is around 33% with the national average set at 37%.

Accessibility of Harlow Satellite LP Sites

Site Ref	Location	Distance to nearest bus stop (m)	Frequency of buses serving nearest bus stop	Distance to nearest rail/tube station (m)	Bus service frequency to rail/tube station	Accessibility of nearest tube station via bus	Distance to nearest nursery/pre-school (m)	Accessibility of nearest nursery/pre-school via bus	Distance to nearest infant/primary school (m)	Accessibility of nearest infant/primary school via bus	Distance to nearest secondary school (m)	Accessibility of nearest secondary school via bus	Distance to nearest GP surgery (m)	Accessibility of nearest GP surgery via bus
HAR - A	B181 Epping Road / B1133 Water Lane	650	3	4400	1	5	800	-	1450	6	3100	4	1400	6
HAR - B	B181 Epping Road / Parsloe Road	320	3	5900	1	5	400	-	300	-	3500	4	450	-
HAR - C	Rye Hill Road	500	1	4700	1	5	450	-	600	-	1900	7	2000	5
HAR - D	A414 North of M11 J7	275	4	5600	0	0	1200	9	1300	8	330	7	1050	8
HAR - E	B183 Sheering Road	950	1	2600	0	0	2100	3	2000	5	3000	5	2600	4

Table 1.5 – RAG table illustrating sustainable accessibility of Harlow satellite LP Sites

Local Plan sites surrounding Harlow are located in largely rural areas that have a comparatively low level of accessibility to health, education and rail facilities via sustainable modes of travel.

All sites have limited direct bus connectivity to the rail stations in Harlow or Roydon, whilst most are located a good distance from the nearest secondary school or GP surgery, with limited bus accessibility.

It should, however, be mentioned that Harlow has an established cycle network which could be used to promote cycling from a number of development sites, particularly if the network could be extended into the sites.

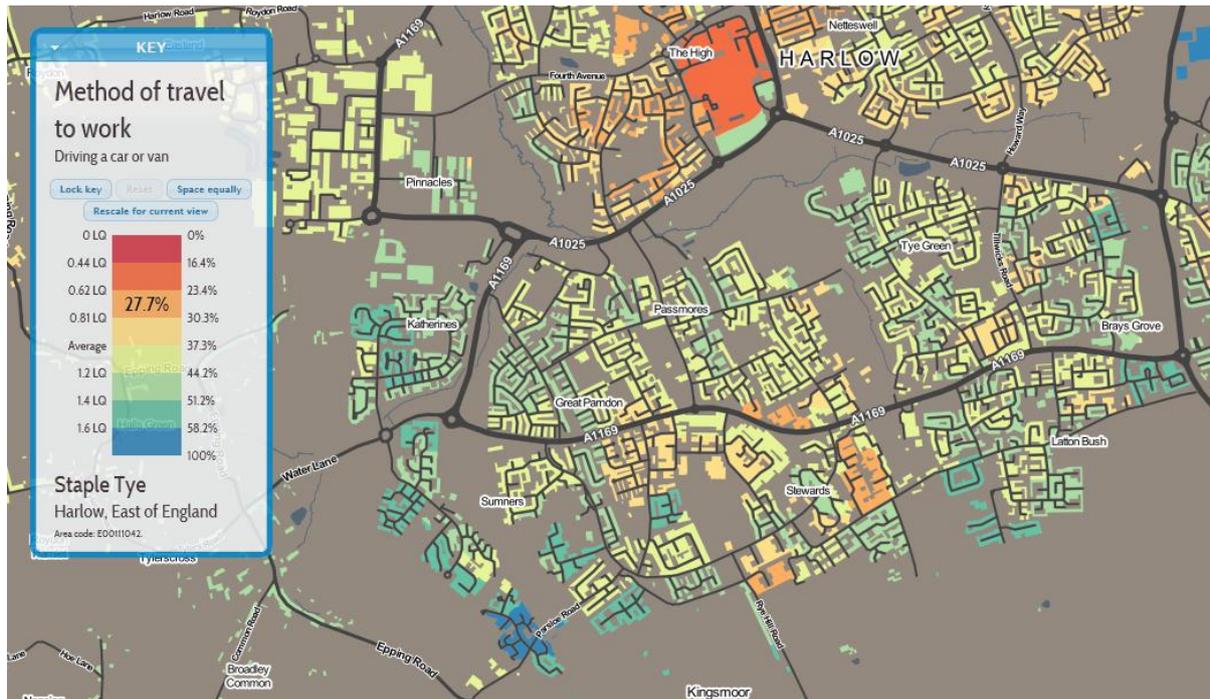


Figure 1.5 – Thematic plot of 2011 Census JTW data in south Harlow (plot produced using mapping software on the DataShine Census website: <http://datashine.org.uk>)

2011 Census Journey to Work data reveals that the lowest percentage car/van use in south Harlow is 28% in Staple Tye. The highest percentage is 64% in Kingsmoor – in the vicinity of the proposed HAR-B site. Overall, the typical percentage of south Harlow residents travelling to work by car or van is around 45% with the national average set at 37%.

Accessibility of Rural Village LP Sites

Site Ref	Location	Distance to nearest bus stop (m)	Frequency of buses serving nearest bus stop	Distance to nearest rail/tube station (m)	Bus service frequency to rail/tube station	Accessibility of nearest tube station via bus	Distance to nearest nursery/pre-school (m)	Accessibility of nearest nursery/pre-school via bus	Distance to nearest infant/primary school (m)	Accessibility of nearest infant/primary school via bus	Distance to nearest secondary school (m)	Accessibility of nearest secondary school via bus	Distance to nearest GP surgery (m)	Accessibility of nearest GP surgery via bus
LSH - A	Station Road / Sheering Lower Road	150	0	150	-	-	1110	6	950	5	5330	0	1110	6
LSH - B	Sawbridgeworth Road / Back Lane	150	0	800	-	-	1410	6	1560	3	4710	0	1410	6
NAZ - 1	Hoe Lane	740	2	3500	1	5	1350	-	1350	-	4900	3	1600	-
NAZ - A	Peck's Hill / Palmers Grove	440	0	3900	1	5	1100	-	1100	-	5000	3	850	-
NAZ - B	Hyde Mead	280	0	3200	1	6	250	-	250	-	4800	3	1000	-
ROY - A	B181 High Street / Harlow Road	210	1	640	0	-	580	-	500	-	5500	4	3900	6
ROY - B	B181 Epping Road (South Roydon)	300	1	1450	0	0	1330	5	700	-	6300	4	4700	6
ROY - C	B181 Epping Road (NW Roydon)	450	1	560	0	-	1200	5	600	-	6200	3	4600	5
SHE - A	B183 The Street (West Sheering)	250	2	2750	0	0	2640	5	650	-	4500	7	2700	5
SHE - B	B183 The Street (North Sheering)	400	2	3250	0	0	2840	3	400	-	5180	6	2850	4
SHE - C	B183 The Street (South Sheering)	180	2	3050	0	0	2500	5	425	-	4750	7	2600	5
THB - A	Forest Drive	800	1	900	-	-	980	0	690	-	2250	0	520	-
THB - B	B172 Coppice Row	750	1	1350	0	0	820	0	1160	0	2080	0	1300	0
THB - C	B172 Abridge Road	875	4	700	-	-	1020	5	1260	3	2320	0	880	4
THO - 1	B1393 High Road / Weald Hall Lane	25	4	3600	3	9	675	-	3000	6	3000	5	2375	9
THO - 2	Woodside	425	4	3725	3	7	290	-	2650	4	2650	3	2500	7
THO - A	Weald Hall Lane (NE Thornwood)	500	4	4100	3	7	1150	-	3550	4	3550	3	2900	7
THO - B	Woodside / Duck Lane	380	4	3750	3	8	340	-	2750	5	2750	4	2525	8
THO - C	B1393 High Road (NW Thornwood)	150	4	3850	3	9	900	-	3325	6	3325	5	2625	9

Table 1.6 – RAG table illustrating sustainable accessibility of rural village LP Sites

Local Plan sites in rural villages in Epping Forest District have a comparatively low level of accessibility to health, education and rail facilities via sustainable modes of travel. Most rural sites are located large distances from nurseries, secondary schools and GP surgeries, with limited bus services providing connectivity to nearby towns.

Of the villages that have been earmarked for LP sites, Thornwood is shown to have the best accessibility via bus to the nearest rail station and to GP surgeries, with regular services to Epping. In contrast, bus services in Roydon do not directly serve the rail station. However, nearby development sites are located within cycling distance of the station, whilst northern areas of sites ROY-A and ROY-C would be within a reasonable walking distance.

Aside from the northern section of site THB-C, proposed development sites in Theydon Bois are not located in the immediate vicinity of the Underground rail station, and may therefore – as with Roydon - benefit from improved cycle connectivity.

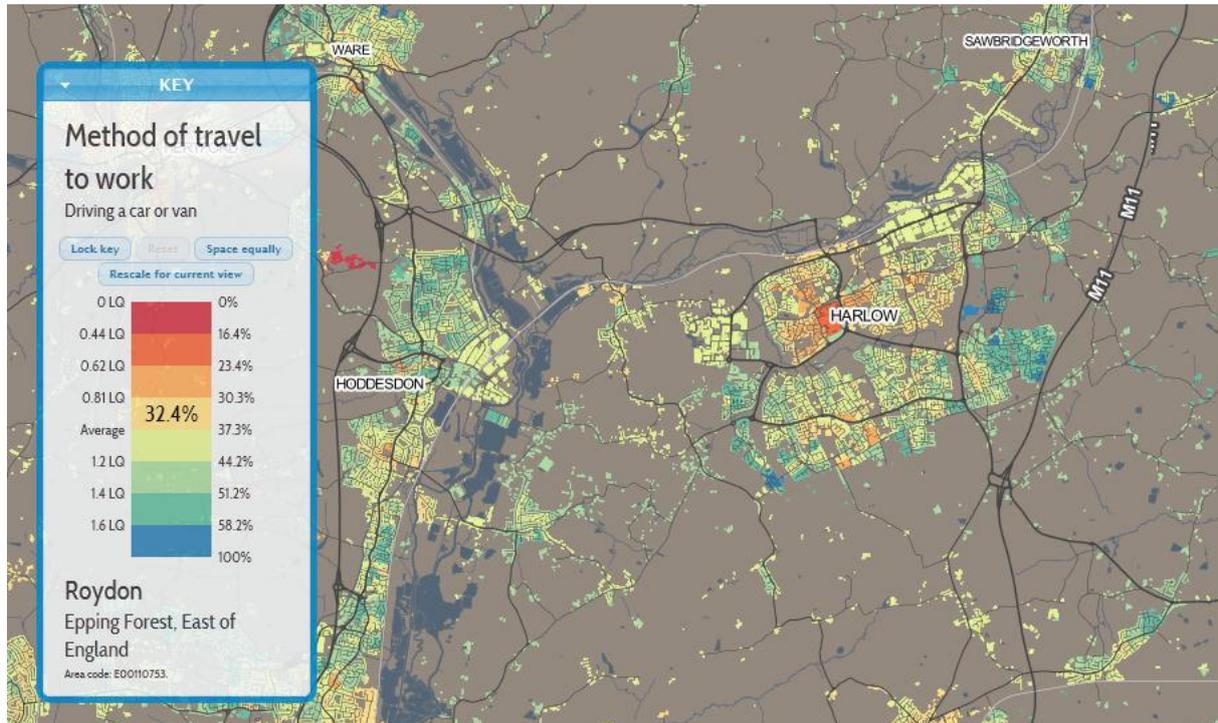


Figure 1.6a – Thematic plot of 2011 Census JTW data in rural villages (plot produced using mapping software on the DataShine Census website: <http://datashine.org.uk>)



Figure 1.6b – Thematic plot of 2011 Census JTW data in Theydon Bois (plot produced using mapping software on the DataShine Census website: <http://datashine.org.uk>)

2011 Census Journey to Work data reveals that the lowest percentage car/van use in rural areas of Epping Forest is 25% in Theydon Bois, close to the Underground rail station. The highest percentage is 63% in Lower Sheering. Overall, the typical percentage of residents living in rural areas of Epping Forest and travelling to work by car or van is around 45% with the national average set at 37%.

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