

01 Introduction

WHAT IS THE INFRASTRUCTURE DELIVERY PLAN?

- 1.1 This Infrastructure Delivery Plan (IDP) provides a schedule of infrastructure requirements to help support new development growth planned within Brentwood Borough Council's Local Plan in the period up to 2033.
- 1.2 The IDP is intended to be a 'live' working document and as such a micro site has been developed which is updated with regular date-referenced significant updates.¹ It is intended to publish the IDP annually as a hard copy linked to the Council's Authority Monitoring Report – generally in December each year.
- 1.3 The IDP is intended to be a user-friendly publication, which allows the reader to identify and understand quickly the connection between land use planning and related infrastructure demands.
- 1.4 The broad approach to developing the IDP is set out below in Figure 1.1.

Figure 1.1: IDP Development



¹ www.brentwoodidp.org

- 1.5 As a practical document, the IDP enables the Council to:
- gather a thorough understanding of existing infrastructure provision in the Borough;
 - plan and co-ordinate new infrastructure required to support new development growth;
 - provide an evidence base to support the deliverability of the new Local Plan, and
 - provide a user-friendly set of information which can be updated and reviewed as part of overall plan monitoring.

THE IMPORTANCE OF INFRASTRUCTURE PLANNING: PLANNING POLICY

- 1.6 The new National Planning Policy Framework (NPPF) (2018) is clear under para 20 of the importance of infrastructure planning in the development of Local Plans stating that local planning authorities should include strategic policies to deliver:
- infrastructure for transport, telecommunications, security, waste management, water supply, wastewater, flood risk and coastal change management, and the provision of minerals and energy (including heat);
 - community facilities (such as health, education and cultural infrastructure), and
 - conservation and enhancement of the natural, built and historic environment, including landscapes and green infrastructure, and planning measures to address climate change mitigation and adaptation.

- 1.7 Under para 20 of the NPPF, plans should set out the contributions expected from development.

'This should include setting out the levels and types of affordable housing provision required, along with other infrastructure (such as that needed for education, health, transport, flood and water management, green and digital infrastructure). Such policies should not undermine the deliverability of the plan'.

- 1.8 It is also noted under the NPPF (para 26) that:

'Effective and on-going joint working between strategic policy-making authorities and relevant bodies is integral to the production of a positively prepared and justified strategy. In particular, joint working should help to determine where additional infrastructure is necessary, and whether development needs that cannot be met wholly within a particular plan area could be met elsewhere'.

- 1.9 Within the NPPF there are also various references to understanding and planning for particular types of infrastructure provision including transport, green infrastructure, infrastructure to support economic growth and communications and digital infrastructure.

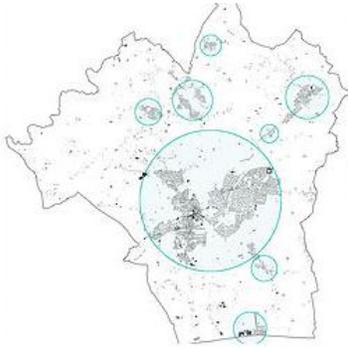
ABOUT BRENTWOOD

- 1.10 The Borough of Brentwood is located within south west Essex to the north east of Greater London and is made up of the Brentwood Urban Area consisting of connected local centres such as Brentwood, Shenfield, Hutton, Warley, Brook Street and Pilgrims Hatch; local village service centres, such as Ingatestone and a wide range of villages set within countryside designated as Metropolitan Green Belt.
- 1.11 The Borough is well located for access to the strategic transport network with direct access to the M25, A127, A12, Great Eastern Mainline (calling at Shenfield and Brentwood) and the c2c rail line connecting London Fenchurch Street with South Essex (with a connection at West Horndon Station). The Crossrail project which terminates at Shenfield Rail Station will further increase the accessibility of the area.
- 1.12 The Great Eastern Mainline and A12 bisect the centre of the main urban areas in Brentwood and Shenfield, while the A127 and C2C line presents strong physical features towards the south of the Borough. As an important location for transport corridors, Brentwood acts as a gateway to the wider Essex area.
- 1.13 Brentwood has been defined in the Local Plan as a ‘borough of villages’. People choose to live and work here because of the excellent transport links connecting us to London and the rest of the country, along with access to the surrounding countryside and green spaces. Brentwood is defined by Green Belt which covers 89% of the borough.

Figure 1.2: Brentwood Borough and Proximity to London

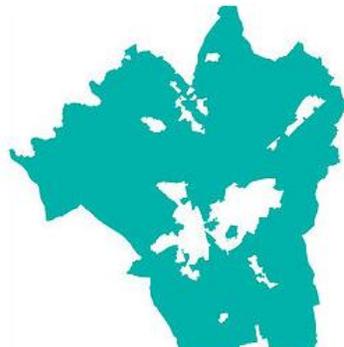


KEY BOROUGH CHARACTERISTICS – A SNAPSHOT



Spatial

Brentwood Borough has a total area of approximately 15,300 hectares. At the heart of the Borough is the market town of Brentwood and its wider urban area, which is surrounded by villages set amongst the countryside and attractive natural landscape.



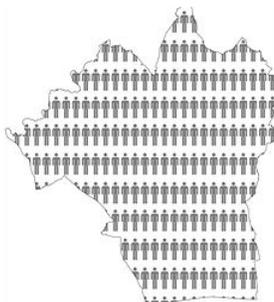
Green Belt

89% of the Borough is within London's Metropolitan Green Belt. This is the sixth highest in England by percentage of total area.



Environment

The Borough has a rich tapestry of natural assets, including two County Parks, 15 SSSI units, and 147 Local Wildlife Sites. The Borough is also fortunate to have almost 13 Conservation Areas covering 600 ha; 12 Scheduled Ancient Monuments, and over 500 listed buildings.



Population

In 2011, the Borough had a usual resident population of 73,601 (Census 2011 – QS102EW) (up by 7.56% from 2001) and a high density per head of 4.8 persons per hectare (compared to 3.1 for East of England and 4.1 for England). In 2011, the Borough had a higher percentage of residents aged 45+ than the East of England and England averages, with a median age of 43 compared with 39 for England (National Statistics – KS102EW). The largest ethnic group is White English and at 89.2% significantly above regional and national averages (85.3% for East of England and 79.8% for England as a whole - National Statistics – KS201EW). Brentwood has the second lowest number of existing households in Greater Essex (Essex Growth Infrastructure (GIF) Framework Nov 2016)



Employment

ONS data (annual population survey – Jul 2015-June 2016) indicates an economic activity rate of 79%, slightly lower than the regional rate of 80.1% but higher than the GB rate of 77.9%. Notably the number of self-employed persons was at 12.5% which was significantly above East of England (10.7%) and GB (10.3%) averages. Long-term unemployed rates were less than both regional and national averages. According to the 2011 Census data, for both male and females, a high proportion of the residents were employed in senior, professional and associate professional occupations compare to both regional and England averages. There was also a significantly higher proportion of females employed in administration and secretarial occupations (24.5%) than the regional and England averages (National Statistics – KS610EW).



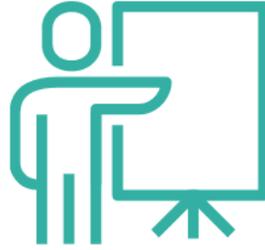
Housing

In 2011, the Borough consisted of 32,067 dwellings. At that point, the percentage of household tenure which is owned in the Borough (75.1%) is significantly above regional (67.6%) and England (63.34%) averages (National Statistics – QS405EW). Consequently the levels of shared ownership, and social and private rented are significantly below East of England and England averages. In 2011, the dwelling stock consists of a higher percentage of detached (31%), semi-detached (31.9%) and flatted (17.9%) dwelling types compared to the regional and England averages for each type. The percentage of terraced dwellings (15.7%) was significantly lower than East of England 22.8% and England average (24.5%) (National Statistics – KS401EW). The average house price for Brentwood Borough in September 2016 was £420,111 compared to £217,888 for the UK (Land Registry).



Health and Wellbeing

The health of people in Brentwood is generally better than the England average. Deprivation is lower than average, however about 10.8% (1,400) children live in poverty. Life expectancy for both men and women is higher than the England average. Local health priorities include improving the health of older people, increasing vaccination coverage, and reducing cardiovascular disease by reducing the prevalence of obesity.



Education and Skills

ONS annual population survey data (Jan 2015-Dec 2015) indicates a lower percentage of the population within Brentwood Borough with NVQ Level 2, 3 and 4 qualifications, than the national average. However, compared to the Essex rate, Brentwood has above average rates of people with NVQ4+ qualifications (GIF 2016).



Earnings

ONS annual population survey data (Jan 2015-Dec 2015) indicates that workers tend to earn significantly above regional and national averages - £756.60 per week compared with £569.40 and £541.00 per week respectively.



Transport and Movement

Travel to Work data from the 2011 Census indicates that driving by car remains the most popular method of travel in the Brentwood Borough (53.06%) up slightly from 52.39% in 2001. However this rate is below the regional rate of 61.66% and England rate of 57.01%. Brentwood has high rates of travel to work by train at 23.13% in 2011 (up from 20.15% in 2001), which is strongly aligned to the Borough's commuter proximity to London. This rate is significantly higher than the East of England rate of 7.20% and England rate of 5.34%. 2011 Census data records Brentwood as having the second lowest level of cycling in Essex with less than 1% of journeys to work being made by bike. The Census date from 2001 to 2011, also indicates a slight reduction in cycle to work activity over the census periods.



Economy and Enterprise

ONS Business Register and Employment Survey (2015) indicates that the top three employee jobs by industry in the Brentwood Borough are M: Professional, Scientific and Technical (12.5%); N: Administrative and Support Services (12.5%), and G: Wholesale and Retail Trade (11.1%). Employee groupings for M and N are above regional and national averages. The Inter Departmental Business Register (ONS) UK Business Counts (2016) indicates a strong bias towards micro enterprises (90.6%) in the Brentwood Borough which is higher than the East of England figure of 89.7%. The percentage of small, medium and large enterprises are lower than the comparative regional figures. Brentwood has higher levels of economic sector specialisations in knowledge based services (GIF 2016)



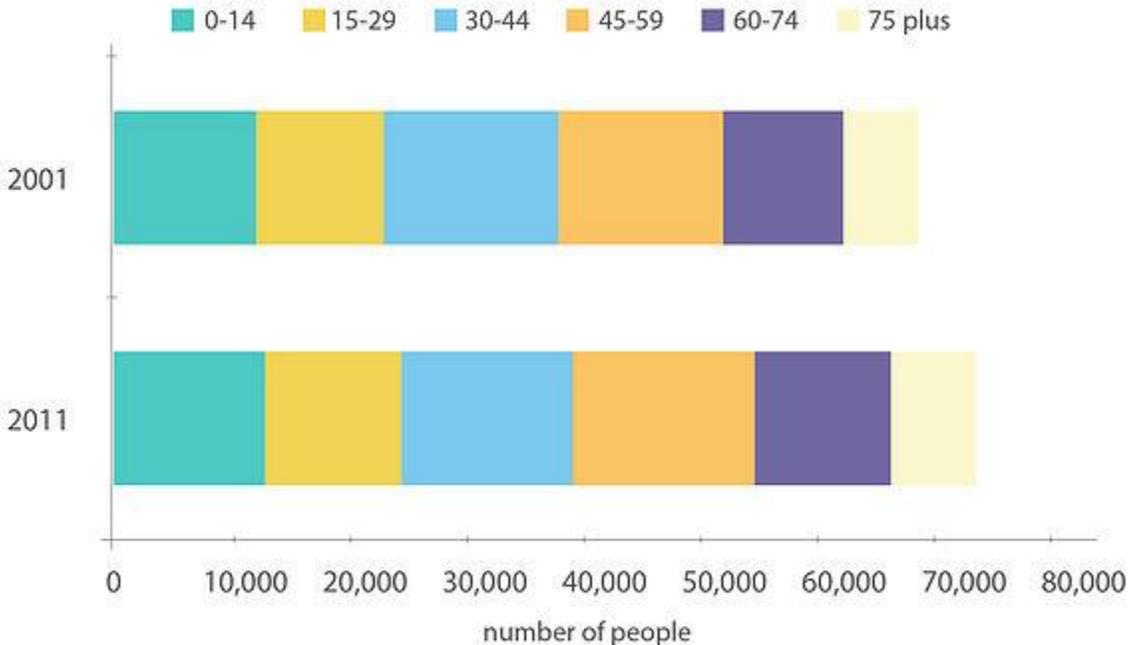
Utilities and Telecoms

Essex as a whole is identified as an area of Serious Water Stress (Identifying Areas of Water Stress, Environment Agency 2007) Brentwood Borough includes some of the driest areas of the country and as such face particular challenges including a general lack of new water resources, growing demand and uncertainty from climate change. The Borough suffers from a number of surface water issues – focused around West Horndon, the Brentwood Urban Area and Ingatestone. The Borough suffers from Broadband coverage deficits in rural areas to the north east, north west and south east. Deficits in mobile phone coverage tend to follow similar patterns to that of Broadband coverage.

DEMOGRAPHIC PROJECTIONS AND HOUSING REQUIREMENTS

1.14 It is noted in the Borough Profile that at the time of the 2011 Census, the Borough had a usual resident population of 73,601. The resident population for the Borough was up by 7.56% from the 2001 Census – almost 5,150 people. In comparison the population of the East region increased by 7.9% between the 2001 and 2011 Census, whilst the population of England grew by 8.9%. Figure 1.3 below highlights the changes in the profile of the population between the two Census dates, which indicates an increase in the number of people aged over 45 and aged 15-29, but a decrease in people aged 30-44.

Figure 1.3 Population Composition in Brentwood (2001 and 2011)²



1.15 The Objectively Assessed Housing Need (OAHN) for the Local Plan is set at 380 dwellings per annum. Further technical information on how the OAHN is calculated and associated matters is available through the technical evidence base for the Local Plan. 380 dwellings per annum is a challenging growth rate for the

² [1]: Figure and analysis text reproduced from pp7-8 - Strategic Housing Market Assessment Part 2 – Objectively Assessed Need for Affordable Housing (HDH Planning and Development Ltd / Peter Brett Associates – June 2016)

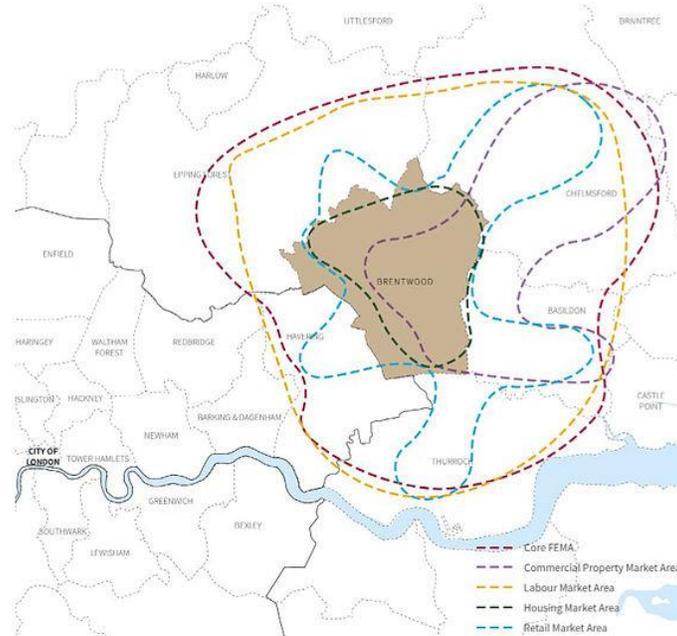
Borough. Historically, through the early part of the plan period (2013 to 2017), the borough has obtained an average housing completion rate of circa 132 dwellings per annum.

- 1.16 Objectively assessed housing need for the Borough does not take into consideration specialist accommodation need linked to residential care homes or nursing homes (classified as C2 – ‘residential institutions’ under the Use Classes Order), and Gypsy & Traveller pitches and accommodation provision.

EMPLOYMENT LAND AND FORECASTS

- 1.17 Brentwood is an attractive business location with a high-quality environment, within close proximity to London, a well-qualified workforce and good transport links. The evidence base on employment land need and supply (Economic Futures Report 2013-2033: Final Draft Report) was updated to ensure that the right level and range of employment land is available to support a dynamic local economy and that the economic forecasts are as up to date as possible and align to the current plan period.
- 1.18 The Council has run work on housing need and employment land need and supply in parallel to ensure that any cross-over issues are considered and addressed in both the SHMA and Economic Futures update report. Further information on the Economic Futures Report is available as technical evidence to the Local Plan.
- 1.18 The updated economic evidence includes an indicative assessment of the Borough’s Functional Economic Market Area (FEMA)(essentially the Borough’s economic geography looking at travel to work, where people access shops and services and other factors), various economic forecasts and an assessment of employment land supply to meet need. The FEMA is set out below in Figure 1.4.

Figure 1.4: Brentwood FEMA



1.19 Figure 1.5 below taken from the Economic Futures report sets out the Local Plan’s total employment land need, taking into consideration econometrical forecast requirements and losses. This totals a combined requirement of between 33.76 to 45.96ha.

Figure 1.5 Total Employment Land Need

Land	
New Requirements	
Forecast Requirement for Employment Land (B Class Uses)	8.1ha to 20.3ha
Forecast Loss of Employment Land by Re-allocations for other uses	21.01ha
Forecast Loss of Existing Employment Allocations through structural change, changes in allocation threshold and permitted development	4.65ha
Combined Requirement	33.76ha to 45.96ha

1.20 The Local Plan analysis of land need and supply is detailed below in Figure 1.6. This indicates with the proposed allocations of 47.39ha a small surplus. Details on housing and employment land allocations are discussed under the typology chapter of the IDP.

Figure 1.6: Employment Land Need and Supply

Land	
New Requirements	
Forecast Requirement for Employment Land (B Class Uses)	8.1ha to 20.3ha
Forecast Loss of Employment Land by Re-allocations for other uses	21.01ha
Forecast Loss of Existing Employment Allocations through structural change, changes in allocation threshold and permitted development	4.65ha
Combined Requirement	33.76ha to 45.96ha
New Supply	
Proposed Allocations	47.39ha
Reduction	
Forecast Pipeline Change of Uses (2017-18) monitoring period (estimate)	-1ha
Initial Surplus / Shortfall	+0.43

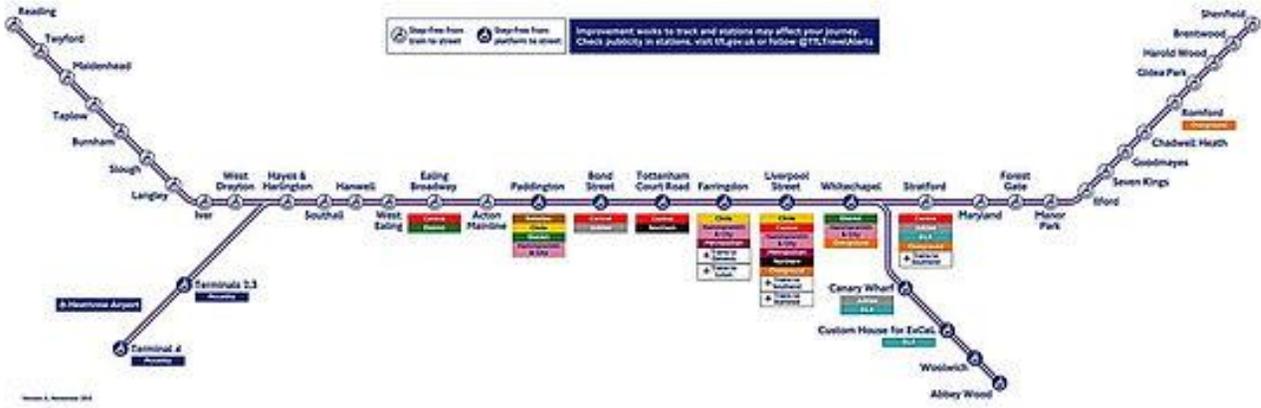
CURRENT MAJOR INFRASTRUCTURE PROJECTS

- 1.21 There are several regionally important infrastructure projects which will have an impact on local planning within the Brentwood Borough area. These are detailed below in this section.

Crossrail

- 1.22 Crossrail began in 2009 and is currently Europe’s largest infrastructure project and identified in the National Infrastructure Delivery Plan (2016-2021). The project creates a new railway for London and the South East (to be known as the Elizabeth line), linking Reading in the west through London and onto eventually Shenfield in the east (See Figure 1.7). The arrival of Crossrail has led to upgraded essential station facilities at Shenfield and Brentwood Stations within the Borough. Further work is required on improving the public realm, access and circulation around both stations.

Figure 1.7: Crossrail



Lower Thames Crossing

- 1.23 A new Lower Thames Crossing is planned to reduce congestion at the existing Dartford crossing and support growth plans, including new homes in Essex and Kent. In April 2017, it was announced by Government that Route 3 was the preferred option - this route was supported by the Borough Council during the public consultation.
- 1.24 Consultation on updated plans for the new Lower Thames Crossing started in October 2018. Discussions are progressing with Highways England and other parties over the implications of the project for access arrangements to the proposed Brentwood Enterprise Park Local Plan allocation off M25 Junction 29.

M25 Junction 28

- 1.25 Highways England consulted in 2017 on options to improve Junction 28 of the M25, which plays a vital role in connecting the motorway with the A12, as well as providing local access to Brentwood via the A1023 (Brook Street). It's a heavily used junction which features a roundabout mainly controlled by traffic lights. Up to 7,500 vehicles per hour currently travel through the roundabout at peak times.
- 1.26 The preferred route option for the scheme is Option 5F which is illustrated in Figure 1.8. This option consists of a two-lane loop road, widening of a short section of the M25 and reconfiguration of A12. At the time of the original consultation, the cost of the scheme was estimated at circa £79.8m, with a construction duration of 27 months.

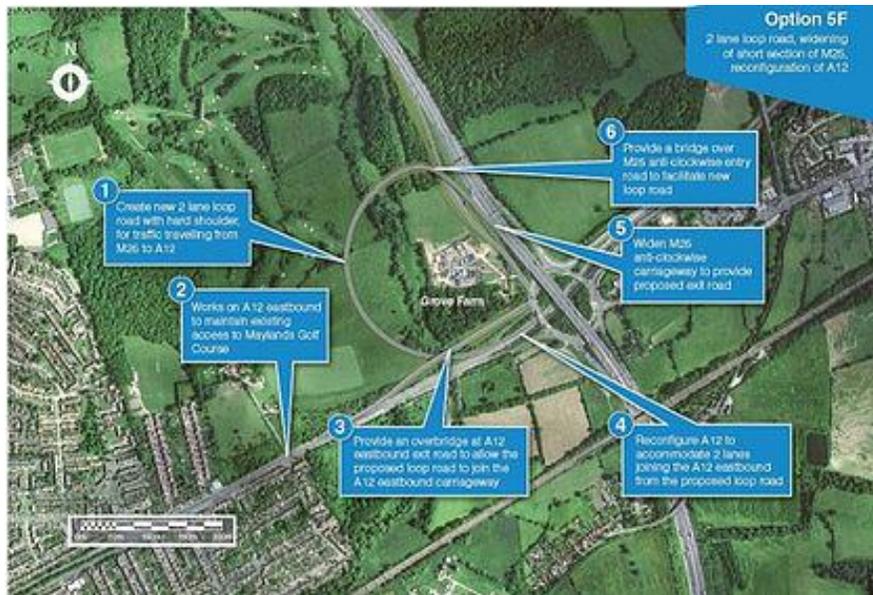


Figure 1.8 M25 J.28 Proposals

A12 Corridor

- 1.27 Highways England consulted during 2017 on high-level options to improve the A12 from junctions 19 (Boreham Interchange) to 25 (Marks Tey interchange) to reduce congestion and improve network safety. The works are programmed to start from 2020/21 at a cost of between £100 to £250m. The A12 route (whole route) is also planned for a technology upgrade to include vehicle detection loops, CCTV cameras and driver information signs, to allow better information to drivers and active management of traffic on the route. The estimated cost of this project is £50-100m. The Road Investment Strategy, 2015 to 2020 (RIS1) indicated that schemes planned for the next Road Investment Strategy (RIS 2) period (strategy starting from 2020), potentially included widening the A12 to three lanes between the M25 and the Chelmsford bypass (junctions 11 to 15).

LOCAL PLAN PROGRESS AND INFRASTRUCTURE PLANNING

- 1.28 The Council is currently preparing a new Local Plan for the Borough which, once adopted, will supersede saved policies in the current Replacement Local Plan (2005). The Council consulted on a Draft Local Plan in January 2016 and undertook in January 2018 a focused consultation under Regulation 18 on proposed housing and employment sites. The Council is finalising its revised full Local Plan for public

consultation, then submission to the Secretary of State for public examination and onwards to formal adoption.

1.29 The Local Plan is informed by a range of technical evidence which also supports analysis contained within the IDP. This evidence base includes:

- Green Infrastructure Strategy (September 2015)
- Local Wildlife Site Review (December 2012)
- Economic Futures 2013-2033 Report (January 2018)
- Renewable Energy Study (April 2014)
- Brentwood Borough Local Plan - Transport Assessment (October 2018)
- Site Assessment Report (October 2018)
- Indoor Sports Facilities Strategy (May 2018)
- Playing Pitch Strategy (October 2018)
- Surface Water Management Plan (SWMP) (January 2015)
- Strategic Flood Risk Assessment (SFRA) (February 2011 and 2018 Update)
- Water Cycle Study (February 2011 and 2018 Update)

1.30 The IDP is also informed by:

- detailed work and discussions with stakeholders on early years and primary, secondary and special educational needs provision;
- detailed engagement with healthcare sector specialists;
- feedback from stakeholders as part of the previous consultation stages on the development of the Local Plan, and
- duty to co-operate activity.

1.31 The Council is currently updating its Community Infrastructure Levy (CIL) information and forward consultation / adoption programme. Under the regulations, infrastructure planning is required to demonstrate an aggregate funding gap to enable the imposition of a CIL in an area. The IDP is an important source of infrastructure costs and funding information and provides the basis for identifying the priorities for future infrastructure funding. The current CIL Guidance sets out that Charging Authorities need to identify the total cost of infrastructure that it desires to fund in whole or in part from CIL. This process will identify a Community Infrastructure Levy funding target. The Statutory CIL Guidance also states that the Charging Authority's infrastructure needs should be directly related to the infrastructure assessment that underpins the relevant Local Plan.

1.32 In parallel to CIL analysis, the Council also commissioned a whole plan viability study, which uses information in the IDP to inform site infrastructure cost values.

IDP METHODOLOGY

Information Collection

- 1.33 This IDP uses two main methodological approaches to collect information on infrastructure delivery and the consideration of infrastructure needs:
- understanding the delivery of services through interaction with infrastructure stakeholders, which can include a range of direct delivery information and future forecasting of issues and matters arising, and
 - where appropriate the application of infrastructure standards or estimates, which relate to linking infrastructure needs to population or growth levels.
- 1.32 There is no prescribed approach to undertaking infrastructure studies, but the Council considers that a balanced or hybrid methodology allows for a rounded consideration of issues. It also facilitates strong stakeholder involvement in the study development assisting with the 'ownership' of joint infrastructure priorities. The work has also involved considering the wide range of representations submitted by members of the public and organisations on infrastructure issues associated with plan-making.
- 1.33 The range and types of information contained within an IDP has a cross relation to plan monitoring work. While the current publication is fairly traditional in the use of information, there may be opportunities in the future to consider the use of 'smarter' data or more joined-up data resources to inform future editions of the IDP. Some of this work may come together through the implementation and delivery of development sites. Examples of smart, multi-layered or real time data include:
- collecting 'real-time' GPS vehicle data for forecasting traffic flows and junction impacts;
 - advanced transportation modelling and accessibility software which allow for multiple layered queries, linking specific groups in society (say older people) to specific types of infrastructure (say health facilities) and public transport planning;
 - development of software solutions to data-collection / feedback informed by regular direct community / stakeholder input rather set reporting periods.
 - building upon the data collected across Essex to inform individual IDPs and the strategic Growth Infrastructure Framework (GIF) to establish a knowledge hub of 'live' infrastructure information;
 - community driven and shared GIS mapping and linked data-sources – the Council currently provides a Datashare and My Property functions.

There are also opportunities to work with stakeholders and local residents on improving information sources and developing more dynamic approaches to infrastructure planning.

Partnership Working

- 1.34 This IDP has been developed through discussions with key infrastructure stakeholders and will continue to require focused involvement and development. Very early work on the IDP was reported to the Essex Community Infrastructure Group (ECIG), which is chaired by Essex County Council. The development of the Local Plan has also included a close working relationship with ECC, which has enabled a strategic approach to be taken on education infrastructure.

Defining Infrastructure

- 1.35 The starting point for defining infrastructure is the definition contained within Section 216 of the Planning Act 2008 as amended by the CIL Regulations 2010. This defines 'infrastructure' as including (but not limited to) the following:
- Roads and other transport facilities;
 - Flood defences;
 - Schools and other educational facilities;
 - Medical facilities;
 - Sporting and recreational facilities;
 - Open spaces; and
 - Affordable housing (removed by the CIL Regulations)
- 1.36 The Planning Act 2008 provides a relatively broad definition of what can be considered infrastructure. It is important to note that this infrastructure is actually delivered by a range of stakeholders and authorities and only a small proportion is or will be delivered by Brentwood Borough Council.
- 1.37 Work by Morphet (2016)³ on infrastructure delivery planning and the publication of the National Infrastructure Delivery Plan, provide a useful starting template for infrastructure categorisation (and sub-categorisation). The findings from this research has been adapted to reflect local issues to produce the infrastructure classifications detailed in Figure 1.9 below.

³ Morphet, J, 2016 Infrastructure Delivery Planning, Bristol: Policy Press 15-17

Figure 1.12: Infrastructure Categories



PHYSICAL INFRASTRUCTURE

- Transport: cycling, walking, public rights of way, bus travel, rail travel, community transport, taxis and private hire vehicles, freight movement and operations, road and junction infrastructure, vehicle parking and public realm.
- Energy: National Grid transmission networks, electricity and gas distribution networks, renewable energy.
- Water and Drainage: potable water supply, waste water treatment and sewage, surface water and fluvial flooding.
- Waste: strategic waste sites, household waste and recycling centres for household waste, kerbside collections.
- Telecommunications: broadband infrastructure, mobile communications, telephone boxes.



COMMUNITY INFRASTRUCTURE

- Education: early years and nursery provision, primary school provision, secondary schools (including sixth forms), post-16 education and training, adult learning.
- Health: public health, GP surgeries, hospitals and clinics, dentists and orthodontic surgeries, pharmacy services.
- Leisure and Community Facilities: formal play areas and facilities (including sports pitches and greens), informal recreation sites, village / community halls and centres, sports halls, swimming pools, indoor bowls and tennis facilities.
- Social, Voluntary and Community Services: children, family and adult specialist care, voluntary and community infrastructure, libraries, cemeteries, graveyards and crematoria.
- Rural Services and Post Offices: parish and rural projects, main post offices, sub-post offices, sorting offices and parcel distribution points.
- Cultural Facilities and Historic Assets: museums, galleries and arts / entertainment venues (including cinemas and theatres), markets, events and festivals, conservation areas, historic parks and gardens, statutory listed buildings, scheduled ancient monuments, buildings at risk, local heritage listings.
- Emergency Services: fire and rescue services, ambulance service, defibrillators, police service.



ENVIRONMENTAL INFRASTRUCTURE

- Parks and Gardens: county parks, borough parks and recreation grounds, historic parks and gardens.
- Ecological Assets, Natural and Semi-natural Greenspaces: Special Sites of Scientific Interest (SSSI), Local Nature Reserves (LNR), Local Wildlife Sites (LoWS), woodlands, geological assets, grasslands, other assets.
- Green and Blue Corridors: main rivers, large ordinary / non-main river watercourses, major tributaries, wetland, major road corridors, major rail corridors, cycling routes / network, pedestrian paths and rights of Way, protected lanes.
- Outdoor Sports Facilities: green surfaces – tennis courts, bowling greens, sports pitches, golf courses, school and other institutional playing fields, and other outdoor sports areas; green formal / informal recreation areas for children / teenagers.

Infrastructure Assessment Framework

- 1.38 The majority of infrastructure chapters in the IDP follow a set format which includes:
- a brief overview of the infrastructure topic;
 - a summary of existing infrastructure, gaps and any potential projects or plans;
 - an assessment of the implications, impact or opportunities of growth linked to infrastructure themes, and
 - financial considerations.

Where infrastructure topic information is limited, or more detailed information is to be gathered, a more streamline chapter structure is followed.

- 1.39 Once a reliable baseline has been established with regard to existing infrastructure provision, the impact of the proposed quantum and locations of new development can be assessed. It should be noted that the manner in which infrastructure planning and development plan making takes place is an iterative process. Therefore, the proposed spatial strategy of the Local Plan has considered the emerging infrastructure evidence base to modify proposals or identify particular local infrastructure priorities.

- 1.40 In terms of overall format the IDP is split into two elements:

Part A – review of infrastructure by theme, and

Part B – cumulative assessment of impact.

02 Development Typology

SPATIAL STRATEGY

- 2.1 This section of IDP focuses upon the proposed quantities of growth associated with the new Local Plan and breaks the proposed housing and employment sites into more detailed elements, such as the type of dwellings (flats, houses etc) expected to be delivered. This allows for consistent measures to be applied to primarily forecasting for potential new pupil numbers for early years and education facilities.
- 2.2 The Local Plan sets out a clear spatial vision and strategy for the Borough, with an emphasis upon protecting and enhancing local character while fostering sustainable communities by concentrating new development on land within the Borough's transport corridors. Brentwood and Shenfield are the main focus for development in the A12 Corridor supported by two major strategic allocations in the A127 Corridor, bringing forward new homes, businesses and employment opportunities.
- 2.3 In terms of total development quantities the Local Plan sets out to meet a total housing need of 380 dwellings per annum. The housing led allocations are split by area is detailed below:
- brownfield land within Brentwood Urban Area / settlement boundary - 1152 dwellings;
 - greenfield land within Brentwood Urban Area / settlement boundary - 95 dwellings;
 - brownfield land within settlement boundary - other locations - 580 dwellings;
 - green belt land - edge of Brentwood Urban Area - 1440 dwellings;
 - green belt land - edge of Ingatestone - 218 dwellings;
 - green belt land - larger villages - 133 dwellings, and
 - strategic allocation - Dunton Hills Garden Village - 2500 dwellings (within plan period).
- 2.4 The Local Plan proposes to allocate just over 47ha of new employment land, with over 50% of the new employment land focused upon a new strategic enterprise park at M25 J.29. Most of the new employment allocations are centred along the A127 corridor, and also includes land at Childerditch, East Horndon and Dunton Hills.

TPOLOGY OF PROPOSED DEVELOPMENT SITES

2.5 The development typology adopted in the IDP uses the following:

- land uses;
- dwelling forecasts;
- types of dwellings;
- employment land floorspace forecasts, and
- job estimates.

2.6 The development of the typology is not an exact science and there are many variables to consider, but the analysis provides an initial baseline from which to consider the impact of development.

Residential Sites

2.7 The Local Plan proposes a mixed portfolio of housing-led allocations which are set out below in Figure 3.1. This figure also includes an estimate of the type of residential units which may come forward for each individual site, split by:

- Discounted Units (DU) – studios, 1-bedroom flats and houses plus senior housing;
- Flats (F) – apartments with 2 or more bedrooms.
- Houses (H) – dwellings with 2 or more bedrooms.

The typology is based upon submitted site sponsor information and professional judgement using site yield calculations plus an assessment of capacity based upon the surrounding built form and comparative schemes from other locations. The mix of dwellings types may change as sites move forward from potential allocations through the planning process to planning applications.

Figure 2.1: Local Plan Residential Typology

Allocation Ref	Site Name	DU	F	H	Total	2018-23 Total	2023-28 Total	2028-33 Total	2033-38 Total	Grand Total
079A	Land Adjacent to Ingatestone By-pass	0	16	41	57	50	7	0	0	57
128	Ingatestone Garden Centre, Roman Road	20	20	80	120	0	120	0	0	120
106	Site adjacent to Ingatestone Garden Centre (former A12 works site)	15	0	26	41	41	0	0	0	41
020	West Horndon Industrial Estates	50	40	110	200	50	125	25	0	200
021 / 152	West Horndon Industrial Estates	140	80	160	380	80	200	100	0	380
200	Dunton Hills Garden Village (200)	330	610	2560	3500	100	1150	1250	1000	3500
076	Land south of Redrose Lane, north of Orchard Piece, Blackmore	10	0	20	30	30	0	0	0	30
077	Land south of Redrose Lane, north of Orchard Piece, Blackmore	10	0	30	40	0	40	0	0	40
294	Chestnut Field, Blackmore Road	0	0	5	5	5	0	0	0	5
085B	Land adj Tipps Cross Community Hall, Blackmore Road	0	0	5	5	5	0	0	0	5
075	Land off Stocks Lane, Kelvedon Hatch	5	0	25	30	30	0	0	0	30
194	Brizes Corner Field, Blackmore Road, Kelvedon Hatch	5	0	18	23	23	0	0	0	23
044 / 178	Land at Priests Lane, Brentwood	0	0	95	95	75	20	0	0	95
002	Brentwood railway station car park	70	30	0	100	0	0	100	0	100
039	Westbury Road Car Park, Westbury Road, Brentwood	18	9	18	45	45	0	0	0	45
040	Chatham Way / Crown Street Car Park Brentwood	15	0	16	31	31	0	0	0	31
041	Land at Hunter House, Western Road, Brentwood	37	11	0	48	0	48	0	0	48
102	William Hunter Way	115	150	35	300	25	240	35	0	300
083	Land west of Warley Hill, Pastoral Way, Warley	6	12	22	40	0	40	0	0	40
022	Land at Honeypot Lane, Brentwood	40	0	160	200	0	200	0	0	200
032	Land East of Nags Head Lane, Brentwood	10	10	105	125	50	75	0	0	125
081	Council Depot, The Drive, Warley	43	65	15	123	0	123	0	0	123
117A & 117B	Ford Headquarters, Warley	150	100	100	350	0	0	350	0	350
027	Land adjacent to Carmel, Mascalls Lane, Warley	0	0	9	9	9	0	0	0	9

186	Land at Crescent Drive, Shenfield	10	35	10	55	30	25	0	0	55
311	Eagle and Child Pub, Shenfield	6	14	0	20	20	0	0	0	20
003	Wates Way Industrial Estate, Ongar Road, Brentwood	60	20	0	80	16	64	0	0	80
010	Sow and Grow Nursery, Ongar Road, Pilgrims Hatch	20	0	18	38	38	0	0	0	38
023	Land off Doddinghurst Road, either side of A12	30	0	170	200	0	200	0	0	200
034 / 235 / 087 / 276	Officer's Meadow, Alexander Lane / Chelmsford Road, Shenfield	90	20	400	510	0	375	135	0	510
263	Land east of Chelmsford Road, Shenfield	30	0	170	200	0	200	0	0	200
158	Land north of A1023 Chelmsford Road, Shenfield	0	0	100	100	0	100	0	0	100

Employment Sites

2.8 The Local Plan proposes to allocate seven new or additional employment allocations which are detailed below in Figure 2.2. The table includes information on site area and the estimated employment floorspace. This information is then used to calculate job estimates, according to average employment densities by potential business type¹. Work was also undertaken using similar types of analysis in the Economic Futures 2013-2033 Report (January 2018).

Figure 2.2: Local Plan Employment Typology

Employment Site			Use Split	Gross Site Area (m2)	Plot Ratio (Lichfields in part)	GEA (m2)	GIA (m2) (5% reduction rule of thumb)	NIA (m2) (5% industrial / 15% offices reduction rule of thumb)	Employment Density (sqm per job) (HCA 2015 Guide) (Median if range and rounded or middle if by type)	Job Estimates
Gross Site Area (ha)	Dunton Hills Employment Zone (200)		5.5	55000						
Business Uses	B1a Business		0.2	11000	0.4	4400	4180	3553	12	296
	B1b R&D		0.2	11000	0.4	4400	4180	3553	50	71
	B1c Industrial		0.1	5500	0.4	2200	2090	1986	47	42
	B2 General Industrial		0.05	2750	0.4	1100	1045	993	36	29
	B8 Storage and Distribution		0.05	2750	0.4	1100	1045	993	77	14
	Mixed B Class - Small Business Workspace	Incubator	0.1	5500	0.65	3575	3396	2887	45	64
		Maker Spaces	0.1	5500	0.65	3575	3396	2887	28	103
		Studio	0.1	5500	0.65	3575	3396	2887	30	96
		Co-working	0.1	5500	0.65	3575	3396	2887	13	222

¹Homes and Communities Agency (HCA) Employment Density Guide 3rd Edition – November 2015

		Managed Workspaces	0	0	0.65	0	0	0	30	0
	B8 / SG - Data Centres		0	0	0.4	0	0	0	575	0
	Totals		1.0	55000		27500	26125	22624		938
Gross Site Area (ha)	Land adjacent to Ingatestone by-pass (part bounded by Roman Road) (079C)		2.06	20600						
Business Uses	B1a Business		0	0	0.4	0	0	0	12	0
	B1b R&D		0	0	0.4	0	0	0	50	0
	B1c Industrial		0	0	0.4	0	0	0	47	0
	B2 General Industrial		0	0	0.4	0	0	0	36	0
	B8 Storage and Distribution		0	0	0.4	0	0	0	77	0
	Mixed B Class - Small Business Workspace	Incubator	0.2	4120	0.65	2678	2544	2162	45	48
		Maker Spaces	0.2	4120	0.65	2678	2544	2162	28	77
		Studio	0.2	4120	0.65	2678	2544	2162	30	72
		Co-working	0.2	4120	0.65	2678	2544	2162	13	166
		Managed Workspaces	0.2	4120	0.65	2678	2544	2162	30	72
	B8 / SG - Data Centres		0	0	0.4	0	0	0	575	0
	Totals		1	20600		13390	12721	10812		436
Gross Site Area (ha)	Childerditch Industrial Estate (112D and 112E (a))		5.87	58700						
Business Uses	B1a Business		0.1	5870	0.4	2348	2231	1896	12	158
	B1b R&D		0	0	0.4	0	0	0	50	0

	B1c Industrial		0.3	17610	0.4	7044	6692	6357	47	135
	B2 General Industrial		0.3	17610	0.4	7044	6692	6357	36	186
	B8 Storage and Distribution		0.3	17610	0.4	7044	6692	6357	77	91
	Mixed B Class - Small Business Workspace	Incubator	0	0	0.65	0	0	0	45	0
		Maker Spaces	0	0	0.65	0	0	0	28	0
		Studio	0	0	0.65	0	0	0	30	0
		Co-working	0	0	0.65	0	0	0	13	0
		Managed Workspaces	0	0	0.65	0	0	0	30	0
	B8 / SG - Data Centres		0	0	0.4	0	0	0	575	0
	Totals		1	58700		23480	22306	20968		571
Gross Site Area (ha)	Brentwood Enterprise Park (Codham Hall Extension) (101C)		0.61	6100						
Business Uses	B1a Business		0.1	610	0.4	244	232	197	12	16
	B1b R&D		0	0	0.4	0	0	0	50	0
	B1c Industrial		0.3	1830	0.4	732	695	661	47	14
	B2 General Industrial		0.3	1830	0.4	732	695	661	36	19
	B8 Storage and Distribution		0.3	1830	0.4	732	695	661	77	10
	Mixed B Class - Small Business Workspace	Incubator	0	0	0.65	0	0	0	45	0
		Maker Spaces	0	0	0.65	0	0	0	28	0
		Studio	0	0	0.65	0	0	0	30	0

		Co-working	0	0	0.65	0	0	0	13	0
		Managed Workspaces	0	0	0.65	0	0	0	30	0
	B8 / SG - Data Centres		0	0	0.4	0	0	0	575	0
	Totals		1	6100		2440	2318	2179		59
Gross Site Area (ha)	Land at East Hordon (109 and 187)		5.5	55000						
Business Uses	B1a Business		0.2	11000	0.4	4400	4180	3553	12	296
	B1b R&D		0.2	11000	0.4	4400	4180	3553	50	71
	B1c Industrial		0.2	11000	0.4	4400	4180	3971	47	84
	B2 General Industrial		0.1	5500	0.4	2200	2090	1986	36	58
	B8 Storage and Distribution		0.1	5500	0.4	2200	2090	1986	77	29
	Mixed B Class - Small Business Workspace	Incubator	0	0	0.65	0	0	0	45	0
		Maker Spaces	0.1	5500	0.65	3575	3396	2887	28	103
		Studio	0	0	0.65	0	0	0	30	0
		Co-working	0	0	0.65	0	0	0	13	0
		Managed Workspaces	0.1	5500	0.65	3575	3396	2887	30	96
	B8 / SG - Data Centres		0	0	0.4	0	0	0	575	0
	Totals		1.0	55000		24750	23513	20822		738
Employment Site	Land north of A1023, Shenfield		Use Split	Gross Site Area (m2)	Plot Ratio (Lichfields in part)	GEA (m2)	GIA (m2) (5% reduction rule of thumb)	NIA (m2) (5% industrial / 15% offices reduction rule of thumb)	Employment Density (sqm per job) (HCA 2015 Guide) (Median if range and rounded or middle if by type)	Job Estimates
Gross Site Area (ha)			2	20000						
Business Uses	B1a Business		0.2	4000	0.4	1600	1520	1292	12	108

	B1b R&D		0	0	0.4	0	0	0	50	0
	B1c Industrial		0.2	4000	0.4	1600	1520	1444	47	31
	B2 General Industrial		0.2	4000	0.4	1600	1520	1444	36	42
	B8 Storage and Distribution		0	0	0.4	0	0	0	77	0
	Mixed B Class - Small Business Workspace	Incubator	0.2	4000	0.65	2600	2470	2100	45	47
		Maker Spaces	0.2	4000	0.65	2600	2470	2100	28	75
		Studio	0	0	0.65	0	0	0	30	0
		Co-working	0	0	0.65	0	0	0	13	0
		Managed Workspaces	0	0	0.65	0	0	0	30	0
	B8 / SG - Data Centres		0	0	0.4	0	0	0	575	0
	Totals		1	20000		10000	9500	8379		302
Gross Site Area (ha)	Brentwood Enterprise Park (M25 Junction 29 works site)		25.85							
Business Uses	B1a Business					15289	14525	12346	12	1029
	B1b R&D									
	B1c Industrial					15670	14887	14142	47	301
	B2 General Industrial					8597	8167	7759	36	227
	B8 Storage and Distribution					67669	64286	61071	77	879
	Mixed B Class - Small Business Workspace	Incubator								
		Maker Spaces								
		Studio								

		Co-working								
		Managed Workspaces								
	B8 / SG - Data Centres									
	Totals					107225	101864	95318		2435
		Other uses								121
		Totals								2556

03 TRANSPORT AND MOVEMENT



OVERVIEW

3.1 This chapter of the IDP is concerned with transport and movement. It integrates analysis of the public realm with more traditional transport concerns. Much of the technical analysis on transport impact and mitigation is based upon the recently published Transport Assessment which accompanies the Local Plan.¹

National Issues and Strategies

3.2 Transport planning and strategy is devolved in the UK to country and local levels. The Government's Transport Investment Strategy published in 2017² sets out a number of clear investment ambitions:

- create a more reliable, less congested, and better-connected transport network that works for the users who rely on it;
- build a stronger, more balanced economy by enhancing productivity and responding to local growth priorities;
- enhance our global competitiveness by making Britain a more attractive place to trade and invest, and
- support the creation of new housing.

3.3 Within Essex, the county council has set out its broad transport vision in the adopted Local Transport Plan (LTP)³:

Our Vision is for a transport system that supports sustainable economic growth and helps deliver the best quality of life for the residents of Essex.

¹ PBA Brentwood Transport Assessment 2018 in conjunction with DUP (David Ubaka Placemakers) - www.davidubakaplacemakers.co.uk

² Department for Transport – Transport Investment Strategy: Moving Britain Forward July 2017

³ Essex County Council – Essex Transport Strategy: The Local Transport Plan for Essex (2011)

Through the transport plan, the Essex County Council is seeking to achieve five broad outcomes:

- provide connectivity for Essex communities and international gateways to support sustainable economic growth and regeneration;
- reduce carbon dioxide emissions and improve air quality through lifestyle changes, innovation and technology;
- improve safety on the transport network and enhance and promote a safe travelling environment;
- secure and maintain all transport assets to an appropriate standard and ensure that the network is available for use, and
- provide sustainable access and travel choice for Essex residents to help create sustainable communities.

3.4 Transport pressure groups such as Transport Focus⁴ highlight five key transport user issues (particularly within the context of passenger transport):

- accessibility – around five percent of rail and more than 20 per cent of bus journeys are made by people with disability or long-term illness and accessibility is also an issue with heavy luggage or people with small children;
- disruption – changes to services and cancellations can cause significant problems;
- retailing – the complexity and confusing nature of ticket purchases for public transport;
- tickets and enforcement – developing a more nuanced approach to tackling payment avoidance, and
- future trends / transport – transport on demand, electronic and low emission vehicles, technological innovation, mobile mapping.

There are also been well-documented recent examples of bus services being dramatically cut in England and populations split over the value of road building and rail investment. Transport policy in England is complex and contested.⁵

3.5 One of the interesting recent findings on transport is that we travel less today, per head of population, than we did one or two decades ago. We make 16% fewer trips than 1996, travel 10% fewer miles than in 2002 and spend 22 hours less travelling than we did a decade ago. This is potentially the outcome of societal shifts - how we work and how we shop, changing demographics, shifts in income across the population as well as policies in the transport sector which have encouraged urbanisation; recessionary cycles; the shift to mobile internet and other advances in information and

⁴ <https://www.transportfocus.org.uk/>

⁵ Further information on key transport campaign issues - <https://bettertransport.org.uk/>

communication technologies, plus a range of other factors.⁶ The use of mobile technology and ‘on call’ or subscription transport services is also a potential set of trends.⁷

Infrastructure Snapshot

- 3.6 The Borough is well located for access to the strategic transport network with direct access to the M25, A127, A12, Great Eastern Mainline (calling at Shenfield and Brentwood) and the c2c rail line connecting London Fenchurch Street with South Essex (with a connection at West Horndon Station). The Crossrail project which terminates at Shenfield Rail Station will further increase the accessibility of the area. The Great Eastern Mainline and A12 bisect the centre of the main urban areas in Brentwood and Shenfield, while the A127 and c2C line presents strong physical features towards the south of the Borough.
- 3.7 For strategic transport planning purposes, Brentwood Borough falls within the sub-regional area of the Heart of Essex (Brentwood, Chelmsford and Maldon local authority areas). *The Essex Transport Strategy (June 2011)* (LTP 3) identifies the main centre settlement and local centres within each of the four sub-regions. Chelmsford is identified as the main centre within the Heart of Essex. Brentwood is identified as one of the Local Centres but is identified as serving as an important functional centre in its own right.

Transport and Movement – Local Patterns and Characteristics

- 3.8 According to the 2011 Census data, Brentwood has the highest percentage of residents travelling to work by train in Essex (15.83%) and also the lowest level of driving by car or van to work (36.32%). The East of England travel to work by train figure is 4.83% and travelling by car is 41.39%. Cycling, walking and bus travel to work, are lower in Brentwood than the East of England figures.⁸ A summary of the Census Travel to Work data is detailed below in Table 3.1.

Table 3.1 Census Travel to Work Data (2001 to 2011)⁹

Method of Travel	2001	% of All Workers	2011	% of All Workers	Percentage point Change
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⁶ Information taken from - First Report of the Commission on Travel Demand – All Change: The Future of Travel Demand and the Implications for policy and planning 2018

⁷ <https://www.topgear.com/car-news/future-tech/lynkco-future-car-ownership>

⁸ Method of Travel to Work (QS701EW) (2011)

⁹ There is not an exact comparison available for the datasets in 2001, people who recorded their place of work as working mainly at or from home were considered to have their mode of travel to work as working mainly at or from home (available in dataset UV39). In 2011, people working mainly at or from home could record, for example, that they travelled to work as a driver in a car or van, despite being based at home.

Works mainly at or from home	3197	6.46%	2239	4.23%	- 2.23
Underground, metro, light rail or tram	342	0.69%	683	1.29%	+ 0.6
Train	6612	13.35%	8385	15.83%	+ 2.48
Bus, minibus or coach	755	1.53%	655	1.24%	- 0.29
Taxi or minicab	201	0.41%	227	0.43%	+ 0.02
Driving a car or van	17189	34.72%	19234	36.32%	+ 1.6
Passenger in car or van	1420	2.87%	1219	2.30%	- 0.57
Motorcycle, scooter or moped	295	0.60%	238	0.45%	- 0.15
Bicycle	317	0.64%	337	0.64%	0
On Foot	2376	4.80%	2828	5.34%	+ 0.54
Other Method of Travel to Work	103	0.21%	206	0.38%	+ 0.17
Not in Employment	16707	33.74%	16708	31.55%	- 2.19
All People	49514	100%	52959	100%	

3.9 Census data also provides an insight into commuting patterns. Figure 3.2 below summarises the position, with the main destinations for out-commuters including Westminster, the City of London, Chelmsford and Tower Hamlets, while in-commuters mainly came from Basildon, Havering, Chelmsford and Thurrock. The destinations show that Brentwood has strong outward commuting connections with London and much of the Borough's in commuting workforce comes from the surrounding local

authorities. There is little out commuting from central London to Brentwood, suggesting that the commuting relationship between Brentwood and London is not reciprocal.¹⁰

Figure 3.2 Commuting Patterns

Variable	Brentwood
Number of Working Residents	36,620
Number of Workplace Workers	26,620
Live and Work in Brentwood	16,560
Out Commuting Workers	20,060
Top Out Commuting Destinations	Westminster/City of London, Havering, Basildon, Chelmsford Tower Hamlets
In- Commuting Workers	17,750
Top In Commuting Destinations	Basildon, Havering, Chelmsford, Thurrock, Epping Forest
Net Outflow of Workers	2,310

- 3.10 It is generally acknowledged that congestion on the M25, A12 and A127 is commonplace, especially at peak times leading to unpredictable journey times within the strategic road network. In recent times there has been some capacity improvements through a Highways Agency major four lane widening scheme to the M25 between Junctions 27-30 completed in Summer 2012. An improvement scheme to Junction 28 Brook Street Interchange was also completed in March 2008.
- 3.11 The main local road network within Brentwood and Shenfield also suffers from traffic congestion especially at peak times and during school terms.
- 3.12 At a non-technical level, there are a number of key local trip destinations within Brentwood town centre which include a number of local authority and independent schools, NHS and private healthcare facilities alongside key town centre shopping, retail and leisure functions. While this is not dissimilar to most comparative sized and located towns, there is a particular concentration of facilities (particularly schools), which add significantly to peak congestion.
- 3.13 What makes Brentwood different to many towns is that there has been no major relief, gyratory or one-way system within the town centre. Therefore, traffic continues to be funnelled into road/route system that has not significantly changed for hundreds of years. The narrowness of the roads in the town centre minimises the scope of local highway interventions.

Strategic Transport Projects

- 3.14 The Brentwood Transport Assessment highlights that a number of studies have been progressing, being led by Essex County Council, on the A127 corridor between

¹⁰ Information and Figure reproduced from Brentwood Economic Futures 2013-2033 Final Report – January 2018 (Lichfields)

Southend-on-Sea in the East to the M25 in the west. The final section of this road is within the Borough, including M25 junction 29. The study involves all local authorities, as well as Highways England. Within the Borough, this route is of strategic importance and much of the proposed growth with the Local Plan is proposed along this corridor.

- 3.15 Highways England are currently undertaking work to develop improvements at M25 Junction 28¹¹. A preferred option has been developed for the junction which involves provision of an additional loop which removes northbound M25 to eastbound A12 traffic from the junction.
- 3.16 The Elizabeth Line is a major infrastructure project, which will provide rail services between Reading in the west to Shenfield in the East and which will provide services across London. The project is expected to be completed by late 2018 and will provide very frequent services from both Shenfield and Brentwood Stations, to and through London. At peak times the current planned timetable includes 12 services per hour from both stations to London¹², on top of the existing services that serve these two stations. This will provide a very large increase in capacity for rail travel, as well as the improved service frequencies. In addition, the Elizabeth Line will provide improved access to parts of London and beyond, including Heathrow, which were not previously served directly.
- 3.17 The Lower Thames Crossing is a proposed new road crossing of the River Thames which will connect the counties of Essex (north) and Kent (south). The scheme is being developed by Highways England, a decision on the preferred route for the crossing was made on 12 April 2017.¹³ The planned route is expected to run from the M25 near North Ockendon, cross the A13 at Orsett before crossing under the Thames east of Tilbury and Gravesend. A new link road will then take traffic to the A2 near Shorne, close to where the route becomes the M2. The Lower Thames Crossing Statutory Consultation commenced on October 10th 2018¹⁴.

Local Emissions and Pollution

- 3.18 According to the Essex Transport Strategy (June 2011) (LTP3), road transport is one of the largest sources of CO2 emissions within Essex, accounting for 30% of all the county's emissions. Road Transport-related CO2 emissions emitted for Brentwood amounted to 228 tonnes, when measured in 2008¹⁵. This was significantly lower than the top emission Essex Districts (Chelmsford, Braintree, Colchester and Basildon), which accounted for over 40% of total CO2 emissions.

¹¹ <https://highwaysengland.co.uk/projects/m25-junction-28-improvements/>

¹² <http://www.crossrail.co.uk/route/eastern-section/>

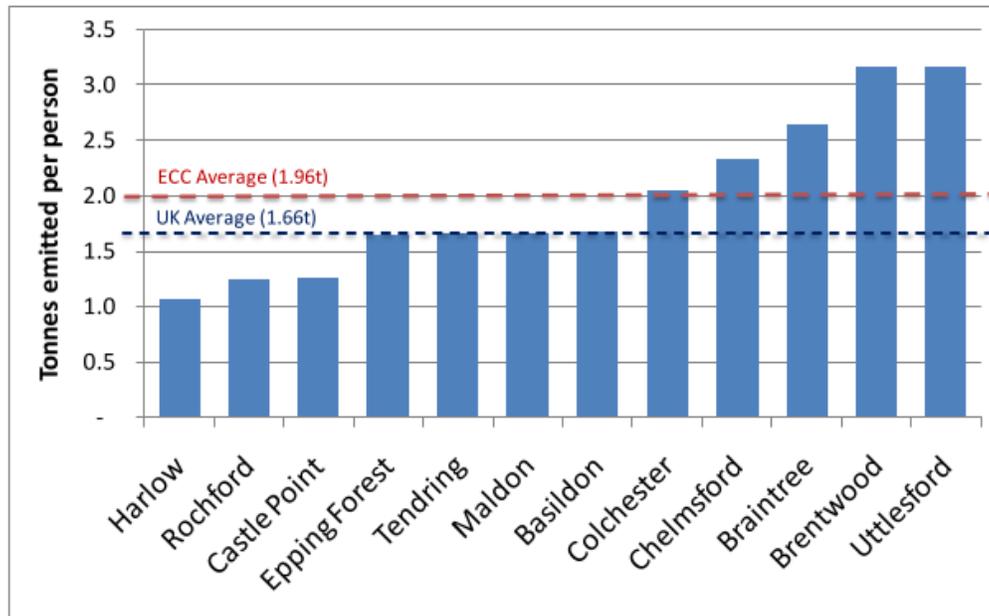
¹³ <https://www.gov.uk/government/news/new-lower-thames-crossings-to-cut-congestion-and-create-thousands-of-jobs>

¹⁴ <https://highwaysengland.citizenspace.com/ltc/consultation/>

¹⁵ National Indicator 186 Local Authority CO2 Emissions – this information will be updated shortly.

3.19 When considering CO2 emissions from road transport on a per person basis, Brentwood has the second highest level of emissions per person in Essex (over 3 tonnes emitted per person). Further information is detailed below in Figure 3.3 and indicates that the figures for Brentwood are significantly higher than the UK and County averages.

Figure 3.3 Road Transport-related Co2 emissions per person by Essex District



3.20 Figure 3.4 (below) also provides information on the Air Quality Management Areas (AQMA) which have been declared by Brentwood Borough Council¹⁶. Declaring an Air Quality Management Area does not mean that the air quality will improve, but the Council has to produce an action plan to help to reduce the effects of pollution by working with the Highways Agency (the Government body responsible for the major roads such as the M25 and the A12) and Essex County Council (responsible for other main roads such as the A128 and A1023) to examine ways of improving the quality of air in Brentwood. Four of the original AQMAs declared in Brentwood have now been revoked, following several years of compliance with the Air Quality Objectives and a trend towards improved air quality - these AQMAs were associated with the A12.

¹⁶ https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=33

Figure 3.4: Air Quality Management Areas

AQMA	Description	Date Declared	Date Amended	Date Revoked	Pollutants
Brentwood AQMA No.1	The AQMA comprises parts of Nags Head Lane, Brentwood and the M25.	10/01/2005		01/01/2017	Nitrogen dioxide NO ₂
Brentwood AQMA No.2	The AQMA comprises parts of Brook Street, Brentwood and the A12.	10/01/2005			Nitrogen dioxide NO ₂
Brentwood AQMA No.3	The AQMA comprises parts of Greenshaw and Porters Close, Brentwood and the A12.	10/01/2005		01/01/2017	Nitrogen dioxide NO ₂
Brentwood AQMA No.4	The AQMA comprises parts of Warescot Road, Hurstwood Avenue and Ongar Road, Brentwood and the A12.	10/01/2005			Nitrogen dioxide NO ₂
Brentwood AQMA No.5	The AQMA comprises parts of Roman Road and Burnthouse Lane, Mountnessing and the A12.	10/01/2005		01/01/2017	Nitrogen dioxide NO ₂
Brentwood AQMA No.6	The AQMA comprises parts of Fryerning Lane, Pemberton Avenue and Trimble Close, Ingatestone and the A12.	10/01/2005		01/01/2017	Nitrogen dioxide NO ₂
Brentwood AQMA No.7	The AQMA comprises parts of Ongar Road, Ingrave Road, High Street and Shenfield Road, Brentwood in proximity to Wilsons Corner (the junction of the A128 and A1203).	10/01/2005			Nitrogen dioxide NO ₂

Public Spaces and Movement

- 3.21 There is a strong relationship between enhancing the public realm and strategies which make places more walkable, legible and connected. The provision of good quality pedestrian and cycling environments can form part of the overall vision for an area in terms of the place-making and redevelopment. Design Council CABI described attractive and well-used outdoor spaces as one of the seven principles of successful places.¹⁷ In areas where there has been an investment in the public realm it demonstrates a sense of civic pride and a value attached to public life. The public realm including such spaces as squares, paved areas, streets and parks can be designed to bring energy, connectivity and a sense of character to an area. Investment in the public realm also makes long term economic sense- stimulating growth in the visitor economy, raising property values and increasing income and profit for local businesses.

¹⁷ CABI 2011 Seven Principles of Good Design

- 3.22 Brentwood Town has seen some significant public realm investment in its main High Street, Crown Street and St. Thomas Road, which included shared surfacing, crossings, seating and other works. The scheme was shortlisted for the Essex Design Initiative Award in 2010 and was runner up for the RICS Award 2010: Community Benefit.

Walking

- 3.23 The Local Plan places a policy emphasis upon enhancing and increasing options for walking to reduce dependencies on private car use and improvements to public transport – particularly along the Southern Growth Corridor and strategic growth sites. Policy in the LTP also encourages increasing walking levels and the use of Public Rights of Way (PROW). Policy 15 – Walking and Public Rights of Way, highlights that:

The County Council will promote walking and use of the Public Rights of Way network by:

- *promoting the benefits of walking;*
- *facilitating a safe and pleasant walking environment that is accessible to all;*
- *improving the signage of walking routes;*
- *ensuring that the public rights of way network is well maintained and easy to use by walkers, cyclists and equestrians.*

- 3.24 ECC has also produced the Essex Walking Strategy (2010) for the County which focuses upon a wide range of pedestrian related issues including:

- Improving pedestrian routes and networks (signage and specific action areas)
- Improving the environment for walking (maintenance, street lighting, street cleaning, utilities works, parking on the footpath and specific action areas)
- Pedestrianisation (commercial considerations, accessibility, pedestrian security and action planning)
- Planning and designing for sensory and mobility impairment
- Road safety and speed reduction
- Making crossing easier
- Public transport interchanges
- Walking and cycling infrastructure
- Crime and fear of crime
- Recreational walking

- Travel plans and safer journeys to school
- Promotion and health benefits

3.25 While Census figures indicate a low percentage of people travelling to work by foot, Department for Transport analysis taken from the Sport England Active People survey indicates that a higher than Essex and England percentage of adults walk at least once per month (90.6%); once per week (86.2%) and at least three times per week (62.7%). Walking for both recreation and utility purposes score above Essex and England averages. Brentwood is also the only Essex Borough which scores higher than the Essex and England averages for percentage of adults usually walking recreationally across all lengths of time per day.¹⁸

Cycling

3.26 The Local Transport Plan provides a strong focus upon enabling and promoting increases in cycling activities for all types of trips. Policy 14 – Cycling states:

The County Council will encourage cycling by:

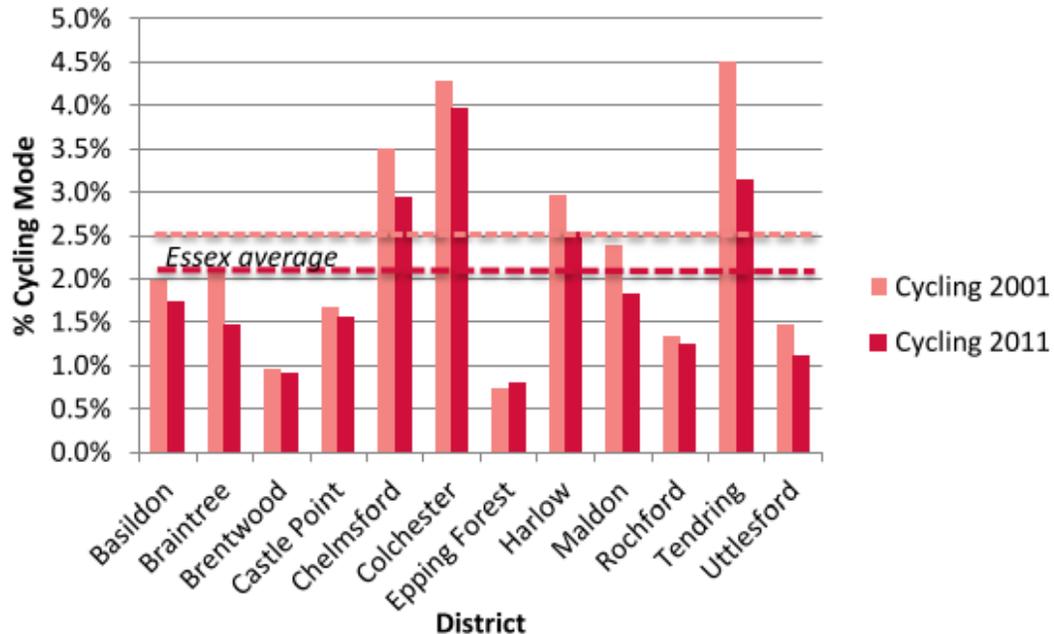
- *Promoting the benefits of cycling;*
- *Continuing to improve the cycling facilities within the main urban areas of Basildon, Chelmsford, Colchester and Harlow;*
- *Developing existing cycling networks in other towns where cycling offers an appropriate local solution;*
- *Working with schools and employers to improve facilities for cyclists;*
- *Improving access to local services by integrating the Public Rights of Way, walking and cycling networks to form continuous routes; and*
- *Providing training opportunities to school children and adults.*

3.27 Baseline data in the Brentwood Cycle Strategy (Sept 2014) (BCS) on cycling activity in Brentwood Borough indicates a very low level of participation. Figure 3.5 below is taken from the BCS and indicates that Brentwood has the second lowest level of cycling to work in Essex, with less than 1% of journeys to work being made by bike. When comparing the Census periods, the statistics indicate a slight reduction in cycle to work activity in 2011 compared to 2001. Department for Transport data (based upon Sport England survey analysis) suggests that a lower than Essex average percentage of adults cycle at least once per month and 3 times per week. The data would tend to suggest a very small proportion of the adult population who cycle for recreation at least 5 times per week, at a percentage rate which is significantly higher than the Essex averages. Brentwood scores low for adults who cycle for utility against Essex, East of England and England averages.¹⁹

¹⁸ Department for Transport – Local Area Walking and Cycling in England: 2015 to 2015 (Published July 2016)

¹⁹ Department for Transport – Local Area Walking and Cycling in England: 2015 to 2015 (Published July 2016)

Figure 3.5: Cycling to Work



- 3.28 When comparing national Census Cycling to Work 2011 data indicates that In Cambridge, 29% of working residents cycled to work, making it the local authority with highest rate of cycling to work. The next highest rate was in Oxford (17%) followed by Isles of Scilly and Hackney at 14%. The data also indicates that there are 31 local authorities where over 5% of working residents cycled to work. The proportion was greater than 10% in six of these local authorities. There were also 29 local authorities where less than 1% of working residents cycled to work (including Brentwood). The four local authorities with the lowest rates were all in Wales with Merthyr Tydfil the lowest with 0.3% of working residents cycling to work in 2011.²⁰
- 3.29 The Census data pre-dates the London 2012 and Rio 2016 Olympics, with research conducted by the London School of Economic (LSE)²¹ suggesting that people are increasingly taking up cycling for fun with family and friends as a recreational pursuit rather than just transport, with a connection being made between elite sporting success and grassroots participation. The ‘Olympics effect’ has raised the profile of cycling across the UK and it would be unreasonable to consider that there has not been an impact in Essex, although this is difficult to measure. This effect has also potentially

²⁰ ONS ‘2011 Census Analysis – Cycling to Work’ 26 March 2014 (England and Wales)

²¹ LSE September 2012 ‘The Olympic Cycling Effect’ (Report Prepared for Sky and British Cycling)

been enhanced by recent UK success in the Tour de France and other major cycling events.

- 3.30 In 2016, Brentwood Borough Council started to develop through a partnership of local cycling enthusiasts, highways engineers, rights of way specialists, planners, healthcare and environmental health specialists a comprehensive network of existing and potential cycle routes covering the Borough and beyond. Some of this work is now informing an update to the current cycle action plan for Brentwood.
- 3.31 The Local Plan places a policy emphasis upon supporting cycle friendly developments across the Borough and with a particular focus upon strategic sites, including Dunton Hills Garden Village. The LTP also encourages increasing walking levels and the use of Public Rights of Way (PROW). Policy 15 – Walking and Public Rights of Way, highlights that:

The County Council will promote walking and use of the Public Rights of Way network by:

- *promoting the benefits of walking;*
- *facilitating a safe and pleasant walking environment that is accessible to all;*
- *improving the signage of walking routes;*
- *ensuring that the public rights of way network is well maintained and easy to use by walkers, cyclists and equestrians.*

Passenger Transport – Bus

- 3.32 When a bus network is operating effectively it has a number of key benefits for society including:
- Freeing up time, the time of users to catch-up on correspondence or simply sit back and relax;
 - Providing an economical form of transport particularly if multi-purchase / seasonal tickets are purchased;
 - Convenient – can link people close to services and facilities with bus information now available online and in real time;
 - Can help improve mental and physical health by walking to and from the bus stop;
 - Improve road safety by taking more cars off the road (one bus can do the job of 40 cars) and reducing the incidents of road accidents;

- Cut congestion and reduce the cost of delays and constraints on growth to the economy and
- Help reduce greenhouse gases - just one person opting to take the bus rather than drive to work every day can reduce their carbon footprint by up to 3.8 tonnes per year²².

3.33 Census data for England and Wales indicates that workers commuting by public transport increased by 14.5 percentage points in 2001 to 15.9 percentage points in 2011²³. However, Bus / coach travel dropped from 7.4 to 7.2 percentage points in total. When comparing Census data for the Brentwood area, it indicates a slight reduction in bus, minibus and coach travel.²⁴

3.34 Figure 3.6 below benchmarks bus travel to work 2011 Census data with Essex District, East of England and England data.

Figure 3.6: Benchmarking Bus Travel

Locations	% of Travel to Work by Bus, Minibus or Coach	Lowest Quartile	Highest Quartile
Basildon	2.23		
Braintree	1.55		
Brentwood	1.24		
Castle Point	2.27		
Chelmsford	2.74		
Colchester	3.83		
Epping Forest	1.42		
Harlow	3.70		
Maldon	1.04		
Rochford	2.21		
Tendring	1.31		
Uttlesford	1.04		
East of England	2.50		
England	4.85		

²² Benefits and information taken from Travel York – Why Take the Bus?

²³ Dataset - 2011 Census Analysis - Method of Travel to Work in England and Wales Report

²⁴ Datasets – Methods of Travel to Work – Resident Population (UV39) 2001 Census, and Method of Travel to Work (QS701EW) All Usual Residents Aged 16-74, 2011 Census

3.35 From this Census analysis it indicates that bus travel to work within Brentwood Borough is within the lowest quartile of districts within Essex, with only Maldon and Uttlesford showing lower levels of bus travel to work. Chelmsford, Colchester and Harlow are showing the highest level of travel to work by bus in Essex, based upon this 2011 Census data analysis.

Passenger Transport – Rail

3.36 The method of travel to work rates by rail in Brentwood are by percentage of usual residents, the highest in Essex and significantly higher as a percentage than the regional and England rates. Figure 3.7 below provides a summary of comparative travel to work by train data for Essex.²⁵

Figure 3.7 Method of Travel to Work by Train

Local Authority Area	Number of Residents Travelling by Train to Work	Percentage of All Usual Residents (aged 16-74)
Basildon	13737	10.92%
Braintree	6295	5.90%
Brentwood	8385	15.83%
Castle Point	5747	8.89%
Chelmsford	11364	9.19%
Colchester	6655	5.18%
Epping Forest	2732	3.01%
Harlow	1723	2.94%
Maldon	2339	5.15%
Rochford	6423	10.63%
Tendring	2815	2.90%
Uttlesford	3495	6.12%
East of England	205077	4.83%
England	1343684	3.46%

3.37 Figure 3.8 below provides an analysis of the number of entries and exit per railway station within the Brentwood Borough over the time-period 2010/11 to 2014/15. It can be noted that Shenfield has witnessed the highest number increase in passengers entering and exiting the station - up by 550,344 from the 2010/11 baseline position - a

²⁵ Datasets – Methods of Travel to Work – Resident Population (UV39) 2001 Census, and Method of Travel to Work (QS701EW) All Usual Residents Aged 16-74, 2011 Census

percentage growth of 18.74%. Ingatestone Station has witnessed a lower growth in the overall total number of passenger exits / entries, but the highest percentage growth of any of the stations (based upon the original baseline) at 19.41%. West Horndon Station's growth levels are very modest.²⁶

Figure 3.8 Railway Station Usage – Exits and Entries

	2010/11 total number of entries and exits made at the station	2011/12 total number of entries and exits made at the station	Number and % Growth (2010/11 - 2011/12)	2012/13 total number of entries and exits made at the station	Number and % Growth (2011/12 - 2012/13)	2013/14 total number of entries and exits made at the station	Number and % Growth (2012/13 - 2013/14)	2014/15 total number of entries and exits made at the station	Number and % Growth (2013/14 - 2014/15)	Total Number of Passenger exits / entries (2010/11 to 2014/15)	Total % Growth (based upon 2010/11 baseline)
Brentwood Railway Station	2420930	2495480	74550	2701998	206518	2809578	107580	2871330	61752	450,400	
% Growth			3.08%		8.28%		3.98%		2.20%		18.60%
Shenfield Railway Station	2936428	2991100	54672	3131298	140198	3314120	182822	3486772	172652	550,344	
% Growth			1.86%		4.69%		5.84%		5.21%		18.74%
Ingatestone Railway Station	636170	694754	58584	715974	21220	750746	34772	759626	8880	123,456	
% Growth			9.21%		3.05%		4.86%		1.18%		19.41%
West Horndon Railway Station	338058	329908	-8150	350210	20302	355416	5206	355630	214	17,572	
% Growth			-2.41%		6.15%		1.49%		0.06%		5.20%
Benchmarks											
Chelmsford	7335952	7876686	540734	8002126	125440	8286879	284753	8381166	94287	1,045,214	
% Growth			7.37%		1.59%		3.56%		1.14%		14.25%

²⁶ Data for Table 4.5 extracted from Office for Rail and Road Estimates of Station Usage Time Series – 1997/98 to 2014/15

Community Transport, Taxis and Private Hire Vehicles

- 3.38 Community and voluntary transport can play an important role in the provision of transport for people who are unable to access conventional public transport services, due to a variety of reasons including impaired mobility, lack of public transport provision and cost of transport.
- 3.39 Taxi services (more formally known as hackney carriages) and Private Hire Vehicles (PHV) provide an individual, mostly door-to-door micro transit system offered to the public by commercial businesses at a local level. They provide services which fill the gap left by public transport services and can provide a flexible alternative to private car use. In 2008, the average person made 11 trips in taxis or private hire vehicles. Taxis and PHVs are used by all social groups, with low-income young women (amongst whom car ownership is low) being one of the largest groups of users. Taxis and PHVs are also increasingly used in innovative ways - for example as taxi-buses - to provide innovative local transport services.²⁷

Private Vehicles

- 3.40 Comparative Census travel to work data indicates that those travelling to work in Brentwood by car or van has increased from 17,189 (2001) or 34.72% to 19,234 (2011) or 36.32%. However, it can be noted that the figures for 2011 are still lower than the England rate of 36.90% and the East of England figure of 41.39%.²⁸
- 3.41 According to the Census 2011, there is an average access to 1.43 cars / vans per household in Brentwood, which is higher than the East of England rate of 1.33 and England rate of 1.17. In the Brentwood area, where households have an available vehicle there are higher levels of accessibility across all quantities of vehicle access (households with 1, 2, 3 and 4+ vehicles), than the regional and national (England) rates. Only 14.86% of households did not have access to cars / vans, this compares to 18.55% for East of England and 25.80% for England.²⁹
- 3.42 In line with earlier observations about declining levels of travel, the Brentwood Transport Assessment indicates that the reliance on private car overall is also falling in recent years. Figure 3.9 shows that whilst population has increased between 2002 and 2014, car traffic has remained static and car traffic per capita and average distance travelled has decreased over the same period. Whilst the past may not be a full indication of future trends, this should be considered important in the context of Local Plan growth³⁰.

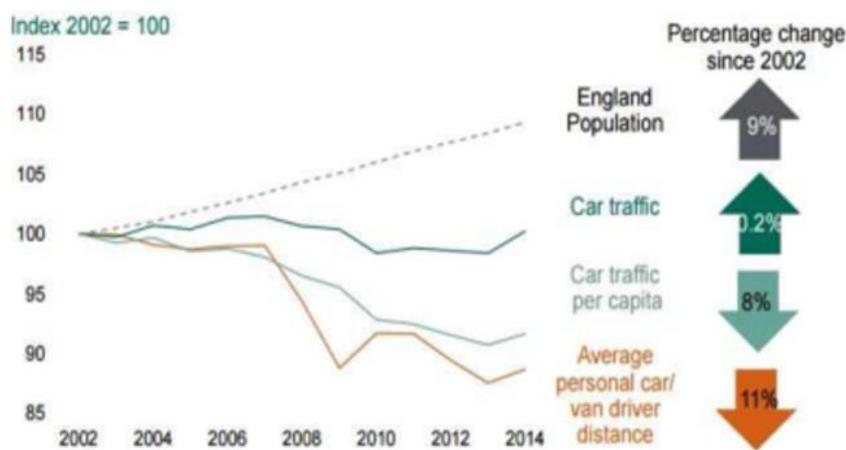
²⁷ Information from DfT Taxi and Private Hire Vehicle Licensing – Best Practice Guidance March 2010

²⁸ Census data – Method of Travel to Work (QS701EW) (2011)

²⁹ Census data – Car or Van Availability (QS416EW) (2011)

³⁰ Information from PBA Brentwood Transport Assessment 2018 p4

Figure 3.9: Traffic and Travel Trends 2002 to 2014



Source: On the Move 2, Dec 2016, Peter Headicar & Gordon Stokes on behalf of ITC

Freight

- 3.43 With the proximity of Essex to international gateways and the ports at Felixstowe, London Gateway and Tilbury in close proximity to the county’s boundaries, significant volumes of freight are transported through Essex. Around 6% of traffic on Essex’s roads is made up of HGVs, rising to nearly a fifth on the Essex section of the M25, 16% on the M11 and around 14% on sections of the A12 and A1208. In addition, around 50 freight trains pass through Essex each day, travelling mainly between Felixstowe and the North-West via London³¹.

EXISTING INFRASTRUCTURE, GAPS AND PROJECTS

- 3.44 This section of the transport chapter reviews existing infrastructure in more detail and pulls out key gaps or infrastructure pressures and any initiatives to tackle current infrastructure problems.

Modelling Brentwood’s Highways Network

- 3.45 Traffic modelling work has been undertaken by PBA on behalf of the Council to inform the transport assessment to support the Local Plan³². To derive traffic volumes for the assessment a three-stepped approach has been undertaken:
- obtaining base data from observed counts – The Base Case Scenario;

³¹ Information from the LTP3 (2011)

³² This section of the IDP uses extracted information from the Brentwood Transport Assessment – further technical details are available in the main publication.

- applying background growth – The Reference Case Scenario, and
- adding on trips associated with the Local Plan proposals – The Local Plan Growth Scenario.

The traffic modelling has been progressed using a spreadsheet model, which then provides for a series of modelled junction.

3.46 The key junctions modelled in the transport assessment are detailed below in Figure 3.10.

Figure 3.10: Modelled Junctions

ID	Junction	Junction Type
1	A1023 Chelmsford Road / Hutton Road / A1023 Shenfield Road	Signalised Junction
2	A129 Rayleigh Road / Hanging Hill Lane	Mini Roundabout
3	A128 Ongar Road / Doddinghurst Road	Mini Roundabout
5	A128 Ongar Road/William Hunter	Priority Junction
6	A128 Ongar Road / A1023 Shenfield Road / A128 Ingrave Road / A1023 High Street	Double Mini Roundabout
7	A128 Ingrave Road / B186 Queens Road	Mini Roundabout
8	A128 Ingrave Road / Middleton Hall Lane / Seven Arches Road	Signalised Junction
10	A1023 High Street/ B185 Kings Street	Signalised Junction
12	Western Road/William Hunter Way	Priority Junction
13	A127 / A128 Brentwood Road / A128 Tilbury Road	Roundabout
14	A127 / Childerditch Lane	Priority Junction
15	A128 Ingrave Road / The Avenue	Double Mini Roundabout
16	A128 Brentwood Road /Running Waters	Double Mini Roundabout
17	A1023 Brook Street /Mascalls Lane	Signalised Junction
18	B186 Warley Hill / Eagle Way / B186 Warley Road / Mascalls Lane	Signalised Junction

19	B186 Warley Street / A127 eastbound	Priority Junction
20	B186 Warley Street / A127 westbound	Priority Junction
22	A1023 Chelmsford Road / Alexander Lane	Priority Junction
23	A12 Junction 12	Roundabout
24	Roman Road / A12 Slip	Priority Junction
25	M25 Junction 28	Grade Separated Roundabout
26	M25 Junction 29	Grade Separated Roundabout
27	A128 Tilbury Road/Station Road	Priority Junction

- 3.47 Using a geographical information system, the road network was extracted from a digital road network for all of Essex, with mean link speeds derived from GPS data. Based upon a geographical zoning system, zone connectors were generated between each zone centroid(s) and its nearest node on the road network, then the road network and zoning system were imported into specialist transport modelling software. This was used to generate:
- travel-time and distance matrices for use in the trip distribution and mode share elements of trip modelling, and
 - after trip matrices had been calculated, assigning the trip matrices to the network to determine link flows and turning flows at road junctions.
- 3.48 Within the modelling, the origin of trips is assumed to be residential dwellings, which is used to determine how many people live in each defined zone and how many trips each person is likely to make. The trip modelling also includes variables for different levels of accessibility (for example urban / rural) and trend data indicating a reduction in commute trips per person over time. In the model homes-based generated trips were also separated by purpose (e.g. education or shopping trips) and non-homes based trips used a similar method. The trip distribution stage, produces a matrix of trips for each purpose, selected option and time-period. Further work was then undertaken to separate out mode share by type (walking, cycling, public transport and car-derived).
- 3.49 The outputs from the spreadsheet approach detailed above are used within specific junction models with associated specialist software to understand the performance of each junction (which are calibrated and validated), before and after Local Plan development levels is applied.

3.50 Based upon the approach detailed above, PBA then run an unconstrained (worst case) or reference case scenario to understand network and junction performance. It is assumed within a congested network that travellers will only accept a certain level of 'pain' before changing travel behaviour. The output from the worst-case scenario modelling shows a number of key junctions under stress, the worst being:

- A128 Ongar Road/William Hunter Way
- A128 Ingrave Road /B186 Queens Road
- A128 Ingrave Road / The Avenue / A128 Brentwood Road / Running Waters
- A1023 Brook Street/Mascalls Lane
- Warley Hill/Eagle Way
- M25 Junction 28
- M25 Junction 29

The A127/B186 junction is not included within this list, as there is a committed scheme which provides adequate capacity for growth.

3.51 Importantly, in order to more realistically model the change in travel behavior due to congested junctions, a hierarchy of choices approach has been used. The key elements of the hierarchy of choices approach include: route reassignment, peak spreading (people travelling earlier or later because of congestion) and sensitivity analysis applied to trip frequency (recognising the changing patterns and frequency of travel). To reduce the impact of developments on the overall road network, a wide range of sustainable transport mitigation is also considered as part of the transport assessment. The discussion on Local Plan development impact and mitigation is detailed further in this chapter under the 'Impact of Growth' sub-heading.

3.52 Local Highways Panels (LHP) have been set up by Essex County Council in all 12 Boroughs, City and Districts to make recommendations and set priorities for smaller (<£100k capital) highways schemes in their area. The panels meet on a quarterly basis and discuss a rolling work programme. The detailed programmes are not covered within this part of the IDP, but an indication of programmes and priorities is available in Part B of the IDP document.

Off-Street Car Parking

3.53 The Council commissioned JMP to develop a baseline report and parking strategy for LA off-street parking facilities within the Borough³³. A number of key issues and opportunities were highlighted during the baseline reporting and stakeholder engagement process. These are summarised below:

- There are some constraints on the level of parking provision within Brentwood, Shenfield and Ingatestone, with a number of central car parks operating close

³³ JMP Consultants Ltd Brentwood Parking Strategy – Baseline Report November 2016

to or at capacity. Projected future employment and housing growth is likely to increase parking demand within the three locations.

- Whilst the general condition of most Council-operated car parks is considered good, there are a number of locations that require improvements in order to provide high quality, safe and secure environment. Coptfold Road multi-storey is a notable example; however, other car parks in need of improvement works include Sir Francis Way and Westbury Road.
- Whilst on-street and off-street parking are managed by separate authorities, it is important that neither are considered in isolation.
- The provision of additional short-term parking in the three locations would be beneficial for accessing the available retail offer; however, geographical constraints impede the ability to expand current parking provision.
- Given the key role of Brentwood, Shenfield and Ingatestone as commuter locations, an appropriate balance between short-stay and commuter parking is required.
- The introduction of 'pay on exit' payment systems, as used at Coptfold Road, may encourage longer dwell times in the town centre.
- It is important that off-street parking is managed appropriately to ensure minimal impact upon wider traffic movements on the local highway network.
- Appropriate provision for disabled blue badge parking across the three locations is important.
- Improving way-finding and signage infrastructure can help improve navigation for visitors and help to identify the location of all car parks.
- Effective enforcement can help to improve the efficiency and management of parking and minimises incidences of inappropriate parking.

Since this report was finished investment works have been undertaken on the Multi-story car park.

- 3.54 Although not a focus of the car park strategy, there are clear opportunities within Brentwood to introduce public e-charging points in appropriate car park locations.

Brentwood Town Centre – Public Realm

- 3.55 The Brentwood Town Centre Regeneration Strategy³⁴, sets out a range of regeneration priorities which relate to the public realm including:

- Improving the pedestrian links and passages to William Hunter Way and Kings Road;

³⁴ Brentwood Town Centre Regeneration Strategy (2010)

- Physical improvements to Chapel of St Thomas a Beckett area and Baytree Centre;
- Enhancing the connectivity to Brentwood Railway Station;
- Improving the quality of the Town’s key side streets including Moores Place, South Street and Hart Street; and
- Tackling the wider issues, symptoms and cures surrounding town centre car use, congestion and car parking.

3.56 Building upon the Town Centre Regeneration work, Levitt Bernstein was commissioned in September 2016 to produce a Town Centre Design Plan which focuses upon place-shaping and ultimately producing a plan (effectively policy guidance) for Brentwood Town to help shape new buildings, spaces, links, and uses. This plan contains a number of observations on the town centre public realms including:

- the lack of spatial character of Kings Road compared to the High Street;
- the downscaling of certain streets in the centre (Crown Street and Hart Street in particular) has contributed to them becoming secondary public realm elements that complement the High Street, and
- the gateways to the High Street and entrance space north of Brentwood Train Station are important but currently lack place-making are poorly defined spatially and car dominated.

3.57 The key areas identified in the plan for site development and public realm enhancement include:

- William Hunter Way Car Park – significant potential to become an extended quarter of the town centre with residential and non-residential uses;
- Baytree Centre Area – improving the linkages and connections through the centres at various levels of intervention;
- Westbury Road Car Park – infill development that also looks to improve the western gateway to the High Street;
- Chatham Car Park – residential infill development and public realm enhancement to include possibly recovering the historic market square.

The study also recognises the importance of improving the spatial character of Kings Road, enhancements to the Chapel of St Thomas a Beckett area and the public realm surrounding Brentwood Railway Station. The public realm around the railway station has been subject to masterplanning in conjunction with Essex County Council, Brentwood Borough Council and the train operators.

Shenfield Railway Station and Surrounds

3.58 Shenfield Railway Station acts as a new terminus for Crossrail but suffers from significant congestion and a public realm environment within the immediate vicinity of

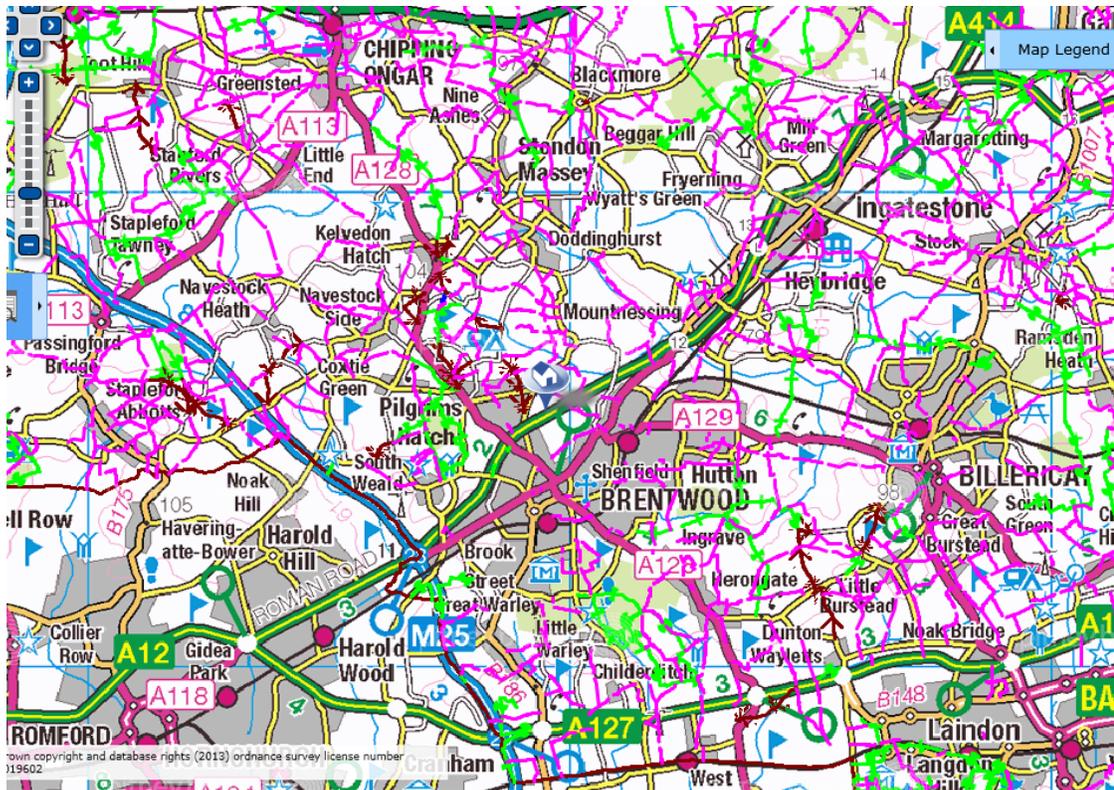
the station which is of extremely poor quality with limited disabled access and a confusing array of vehicle, pedestrian and cyclist movement. The main High Street is also of low quality in terms of the public realm with poor accessible connections to the car parks. Greater Anglia is currently working upon an Access to All bid for access improvements at the station. The public realm environment around the station has also been subject to masterplanning in conjunction with Essex County Council, Brentwood Borough Council and the Greater Anglia.

Walking and Public Rights of Way

- 3.59 Brentwood Borough Council encourages people to use the local countryside through access to defined Public Rights of Way (PROW). The Council works with the Brentwood Countryside Management Volunteers (BCMV) jointly to help maintain 243 km of rights of way in the Borough on behalf of Essex County Council. The network is made up of a diverse series of footpaths, bridleways and byways.
- 3.60 The PROW interactive map³⁵ is reproduced below (Figure 3.11) and illustrates a particularly strong network of routes to the north of Pilgrims Hatch with linkages to Doddinghurst and Kelvedon Hatch (routes in pink dashes). There is also a reasonably strong network of routes between Stondon Massey, Blackmore and beyond. There are more limited PROW networks south and south east of Brentwood Town, although there is strong connectivity through Thorndon Country Park.

Figure 3.11 Public Rights of Way – Brentwood Borough

³⁵ The interactive Map of Public Rights of Way is for general use only – it is not the statutory Definitive Map which is held at County Hall.



3.61 There are also cross-over issues between walking and some of the issues detailed under the public realm sections. There are also opportunities to improve connectivity and walkability to key destinations such as schools, health facilities and transport hubs.

Cycling

3.62 The current cycling infrastructure network and infrastructure within the Borough is poorly developed and consists mainly of:

- a limited fragmented range of urban on street cycle routes – primarily focused upon Brentwood Town;
- a fragmented network of off-road routes to the south of Brentwood but connected to part of Thorndon Country Park;
- linear longer routes (mixture of off-road and on-road) through and to the north and west of Pilgrims Hatch;
- a longer linear route to the north west of Shenfield, and
- well used railway station cycle parking, often of poor quality and lacking security or supporting facilities;

The cycle network appears to have developed organically in piecemeal manner rather than through a clear strategy. Figure 3.11 below provides an overview of current cycle network infrastructure within the Borough.

Figure 3.11 Current Cycle Networks

To insert

- 3.63 The Brentwood Cycling Group historically identified a range of barriers to the growth of cycling in the Brentwood Borough. These included:
- overcoming physical barriers to cycling, including strategic transport corridors and difficult road junctions;
 - high traffic speeds in rural areas;
 - improvements required to cycle-parking facilities – particularly linked to Town Centres and Transport Hubs;
 - lack of connected and segregated cycle lane infrastructure;
 - disconnected village and countryside routes, and
 - a lack of awareness of cycling opportunities locally.

It is understood that ECC is undertaking further work on a cycle action plan for Brentwood, building upon the original work of the group.

Bus Infrastructure

- 3.64 The frequency of services and extensiveness of the bus network within the Borough is illustrated thematically below in Figure 3.12.

Figure 3.12 Bus Network

To Insert

This figure has been informed by the bus service information contained in Appendix X³⁶.

- 3.65 The key headlines from the mapping of bus services includes:
- Brentwood, Hutton and Shenfield – Urban Core: Frequent linear and circular services. Shenfield Railway Station not as well served as Brentwood Railway Station for bus connections. Some of the suburban estate services are more limited.
 - North West of the Borough - Very frequent but limited stop weekday and Saturday services between Pilgrims Hatch and Brentwood Town and Brentwood Railway Station (no.37). More limited and often infrequent services north of

³⁶ Information was collected in 2016 and is subject to updating.

Pilgrims Hatch, covering rural areas and villages. The No.61 service (formerly 261 service) linking Brentwood with Blackmore was recently saved from closure by ECC and is currently run by Ensign Bus.

- South East of the Borough - Limited weekday and Saturday service via West Horndon (no.565).
- Connections to Other Locations: Fairly frequent daytime weekday and Saturday services between Brentwood and Basildon (no.9) and fairly frequent and extensive weekday, Saturday and Sunday service between Brentwood and Romford (no.498). Fairly frequent weekday and Saturday services between Brentwood and Chelmsford. More infrequent weekday and Saturday services to Grays (no. 268/269).
- Sunday and Evening Services: Very limited (every 2 hour) Sunday services to Pilgrims Hatch no.37; Mountnessing / Ingatestone / Chelmsford no.351; Brentwood circular via Shenfield and Hutton no 80A/C. Recent cut-backs in evening services (no.37).

3.66 Whilst Brentwood Town Centre is well serviced by daytime and evening bus services, services are restricted in both Shenfield and Ingatestone (and very restricted towards the south of the Borough). The majority of bus services that serve Shenfield offer either limited or no service at weekends. Similarly, no night buses serve Shenfield. Only one daytime bus service serves Ingatestone, and broadly follows the route of rail services, with no evening or night service serving the area. The provision of improved bus services, both in terms of locations served and service frequency may help to reduce parking demand in the main built-up areas. A series of measures such as Park and Ride, reduced car parking levels / premium priced spaces and express bus routing to key destinations may help improve bus viability.

Rail Infrastructure

3.67 The Borough is well served by rail transport with two active rail lines. The Abellio Greater Anglia (AGA) runs north east/south west across the Borough and the c2c line runs east/west across the southern portion of the Borough. As noted earlier in the chapter, the Travel to Work Census data indicates that rail travel is the second most popular form of transport to work (15.83% of the working population travel by this mode), with only travel by car / van being more popular (36.32%).

3.68 The AGA service connects London Liverpool Street with Norwich and there are stations serving Brentwood Town, Shenfield and Ingatestone. The c2c line connects Shoeburyness via Southend Central and Basildon with London Fenchurch Street with one rail station in the Borough at West Horndon. Shenfield represents the most strategically important as it is an interchange rail station which allows connections to the AGA branch to Southend Victoria and intervening stations to Stratford. Shenfield Station is also the north-eastern terminus of Crossrail which is currently under construction.

- 3.69 A significant proportion of the fast trains on the AGA call at Shenfield and all of the Southend Victoria bound train. Through trains serve Ingatestone on a less frequent basis and Brentwood Station is currently served solely by the slower Metro service (which will be effectively replaced by the Crossrail service) which stops at intervening stations to London Liverpool Street. West Horndon is served by trains to travelling east towards Shoeburyness and Southend and west towards London Fenchurch Street.
- 3.70 Crossrail will increase capacity especially at Brentwood Station from 12 trains in peak hours³⁷ to 24 trains. There is also a slight improvement in travel times to key London destinations. Shenfield Station will benefit from an increased frequency of train services to London and the convenience of services which enable passengers to travel to key London destinations without changing train. Fast services into Liverpool Street will be unaffected by the introduction of the new Crossrail service. Crossrail is planned to open on a phased basis from 2017, although full Crossrail services from Brentwood and Shenfield will be from December 2019.

Community Transport, Taxis and Private Hire Vehicles

- 3.71 Brentwood Community Transport (BCT) plays an important role in the provision of transport for people who are unable to access conventional public transport services, due to a variety of reasons including impaired mobility, lack of public transport provision and cost of transport.
- 3.72 In addition to the 898 Queens Shopper Bus service and 808 Community Hospital circular service, noted under bus services earlier in this chapter, the BCT also delivers a:
- **Social Car Scheme** - used by members when they need transport for – Shopping, Doctor, Dentist, Chiropodist, Optician, Visit Friends / Family, Hospital (visits only, not appointments), Social, Further Education, Lunch Clubs.
 - **Minibus Brokerage Scheme** - available to local non-profit making groups who need fully accessible transport. Bookings are subject to vehicle and driver availability. Groups can provide their own drivers, providing they meet our training standards. The minibuses can be booked for – Group Outings, Theatre Trips, Shopping, Kids Clubs, Restaurants, Social Clubs, Exercise Classes, Luncheon Clubs, Meetings. An annual membership fee is payable to join the scheme. Groups assist with the cost of the journey by making a contribution depending on usage.
 - **BCT Organised Day Trips**
Throughout the year, a number of outings are arranged on our accessible minibuses, using a volunteer driver. The trips are planned in advance and

³⁷ Morning peak 07.00-09.00, Evening Peak 17.00-19.00

members are notified. Trips can be around various parts of Essex, such as Essex Villages, or perhaps a trip to a shopping centre.

IMPLICATIONS OF GROWTH

- 3.73 This section of the chapter focuses upon the impact of growth on transport infrastructure and potential mitigation measures. The information in the IDP draws extensively from the Transport Assessment which accompanies the Local Plan.

Highways Modelling

- 3.74 The overall impact of growth has been measured using the proposed Local Plan development sites (housing and employment) plus any Local Plan or committed developments from adjacent local authorities that would be likely to have an impact upon highways within the Borough. Where no information was made available from Local Authorities (e.g. Thurrock), growth is included as part of the overall background growth. The growth from neighbouring authorities have been added to a 'reference case scenario' from which the Brentwood Local Plan sites are tested.

- 3.75 To reduce the impact of developments on the overall road network within Brentwood Borough the Transport Assessment considers alternative methods of transport other than the car to lessen the impact of strategic development sites. As required within NPPF and the Local Plan Transport Evidence base guidance, sustainable transport interventions will form the main part of any mitigation required to provide additional mobility capacity within the system. These issues are discussed in the relevant sections below (para x to x), before detailed consideration of physical highways mitigation measures.

Sustainable Transport

- 3.76 The potential to create an integrated sustainable transport network, linking railway stations, places of employment, new residential developments and existing development in the wider Brentwood area is key in achieving a reduction in car dependency and influencing other travel, where there is capacity already available or where it can be created through various travel initiatives. These will have an impact on travel, both related to specific Local Plan sites, but also the wider community, as the Local Plan facilitates the investment required.
- 3.77 A key part of the Transport Assessment mitigation strategy is to influence school travel, which is adding to congestion within Brentwood town centre in the AM peak. This creates not just issues with junction capacity but impacts on the ability of traffic to travel smoothly through the area, as parked vehicles cause conflicts. One example of

how improvements could be achieved in a relatively cheap and achievable way is through the provision of a School Clear Zone which is a key element is reducing peak hour trips within Brentwood town centre.

3.78 The Transport Assessment also sets out a range of measures to support the delivery of sustainable growth within the A127 growth corridor associated with Dunton Hills Garden Village, redevelopment of West Horndon Industrial Estate, expansion of Childerditch Industrial Estate and new strategic scale employment opportunities proposed Brentwood Enterprise Park. The key measures are set out below in Figure 3.14.

Figure 3.14 – Southern Growth Corridor: Sustainable Transport

To insert – DU plan

3.79 There are specific policy requirements within the Dunton Hills Garden Village to promote car light development and a strong network of walkways and cycleways throughout the scheme and the early adoption of bus infrastructure. There are also opportunities on the project to innovate with significant new infrastructure for e-charging, cycle hubs and smart infrastructure during the delivery period of the project. Establishing strong connectivity to West Horndon Railway station and wider areas through sustainable transport infrastructure will also be a key marker of success for the scheme. Both DHGV and West Horndon development will also necessitate the development of new village centres, with associated public realm infrastructure.

3.80 Figure 3.15 below pulls out the key headline sustainable transport projects from the Transport Assessment with supplements with a range of other measures linked to issues identified earlier in this chapter. The items in blue form part of the transport mitigation measures in the Transport Assessment. As a package of measures to reduce car dependency these projects need to be central to the Local Plan. It is recognised that further feasibility / business case analysis is required in some measures and the timing of delivery will be across the plan period, broadly in line with the timeframe outlined in the Figure 3.15. Long-term project concepts, which are potentially beyond the plan period such as the Essex Rapid Transit system are not included in Figure 3.15.

Figure 3.15: Sustainable Transport Measures

Item	Description	Timeline	Comment
	Mitigating the impact of traffic - BUA		
1	Create School Clear Zone to restrict all vehicles from stopping, parking for drop off during AM/PM	SHORT - MEDIUM	Parking allowed in legally designated car parks and spaces on the High St within the zone. Should reduce congestion at

	peaks from a specific area(s).		AM peak. Additional benefit of improving air quality at Wilson Corner. Public Transport exempt.
2	Deliver Park, Ride or Stride facilities for workers within Brentwood T.C. or drop/pick up off points for parents to drop off their children.	MEDIUM	Impact on local traffic patterns would need to be understood. Work needed with schools to re-educate parents. Consider an electric and ordinary bicycle hire scheme hub. Additional option to include bus service for schools from these hubs.
3	Policy requiring all new developments dependent on location to be 'Car light' and/or encourage e-vehicles.	SHORT	Difficult given political situation Consider partnership with car club company providing electric cars or low emission hybrids
4	Travel plans – support / promote personalised travel planning and smarter travel choice options	SHORT	Deliver a set of focused smarter travel programmes and supporting literature / web resources
Reduce vehicle emission levels and future-proof infrastructure			
5	Introduce electrical parking points to encourage use of such vehicles and plan and deliver other IT infrastructure redundancy to allow future implementation of emerging SMART systems.	SHORT / MEDIUM	All new residential and commercial developments should include e-charging spaces for car clubs using e-vehicles and charging hubs for e-bikes. Important to facilitate sustainable north/south movements from DHGV to Central Brentwood.
6	Ban all large freight vehicle from stopping deliveries within the Central Brentwood zone and A128 corridor during AM/PM peaks.	MEDIUM	New developments sites won't compete with Central Brentwood as the retail centre. The larger population could lead to more large vehicles stopping for extended periods to service new developments and a busier High Street.
7	Review of air quality management area (AQMA) action plan	SHORT	Focused review of existing action plan with updates on forward strategy
Public Realm Improvements			

8	Introduce a pedestrian wayfinding system like Legible London.	SHORT / MEDIUM	Residents and employees of new developments and the existing population should be encouraged to walk more.
9	Prioritise public realm improvements within Brentwood Town Centre linked to site development opportunities	MEDIUM / LONG	There are opportunities for significant enhancement of the public realm linked to key brownfield development sites including William Hunter Way.
10	Support major improvements to public realm at Shenfield and Brentwood Railway Stations	SHORT / MEDIUM	Building upon the stakeholder endorsed masterplanning work to introduce a series of public realm, accessibility and connected infrastructure improvements
Walking / Cycling			
11	Introduce new walking and cycling infrastructure within new developments – particularly strategic sites	MEDIUM / LONG	Site by site analysis required of options to introduce new walking and cycling infrastructure linked to new development and wider green infrastructure
Cycle Infrastructure			
12	Plan and deliver in phases cycle routes in Brentwood UA initially connecting Transfer Hubs to Town Centre schools. Feasibility analysis into wider network development options.	MEDIUM	Segregated routes where possible. Where not consider contra-flow cycling routes by creating new one-way streets. Consider 20mph in the zone.
13	Undertake feasibility / business case analysis into widening cycle networks across the Borough and beyond	MEDIUM / LONG	Work by the local cycle group identified a wide range of cycle network enhancement which require further analysis as part of cycle action planning
14	Introduce high quality cycle parking and supporting facilities at the Borough's railway stations	SHORT	Many of Brentwood's key rail stations suffer from poor cycle infrastructure, which requires upgrading.
Bus Infrastructure			
15	Feasibility study into bus service improvements –	SHORT	Some evidence that service improvements could be made to bus

	particularly linked to new developments and major transport hubs		services to support transport hubs such as Shenfield Station.
	Community Transport		
16	Create and/or promote a multiple service App making access to smart car hire/ car clubs / community buses/ booking bikes (including e-bikes) etc. easier.	SHORT	Partner with software organisation that creates community-based apps. Pays for itself through advertising
	Southern Growth Corridor		
17	Public Realm - New village centres / civic square at West Horndon industrial estate redevelopment	MEDIUM / LONG	Subject to detailed masterplanning there will be a need to provide high quality public realm or civic square associated with the redevelopment
18	Strategic Cycle Route – Connecting major development sites along the southern growth corridor	MEDIUM / LONG	Mixed environment cycle route with supporting infrastructure connecting DHGV, West Horndon, Childerditch Industrial Estate and Brentwood Enterprise Park
19	New Bus Route Infrastructure – new linked bus route serving key new developments within the southern growth corridor	MEDIUM	Early adoption of bus infrastructure within DHGV and other key extension / development sites supported with appropriate infrastructure with connection via West Horndon Transport Interchange. Also review changes to NHS hospital services and transport implications.
20	West Horndon New Transport Interchange - Create through phases a new multi-modal interchange at West Horndon Station	MEDIUM	This interchange will serve the DHGV, Childerditch, West Horndon and Enterprise Development sites, plus any future Northern Thurrock developments.
	Dunton Hills Garden Village		

21	Feasibility studies into green bridge (A127) and pedestrian underpass (A128)	SHORT	Options to be explored looking at feasibility of providing additional connectivity to surrounding areas.
22	Walkways / Cycleways - Network of new walkways / cycleways across the development potentially linked to rights of ways and key ecology corridors	MEDIUM / LONG	Significantly opportunities at an early stage in the development to engrain a series of strategic walkways / cycleways across the scheme
23	Cycle Hub and Charging Points - Dunton Hills e-bike / cycle hub – integrated cycle hub with supporting facilities	MEDIUM / LONG	Opportunity to engrain enhanced cycle facilities within the scheme to promote and support the uptake of e-cycles and conventional bikes / possible link to e-charging infrastructure
24	Public Realm - New pedestrian focused village centres / civic square at DHGV	MEDIUM / LONG	Subject to detailed masterplanning there will be a need to provide high quality public realm or civic square associated with the garden village

Highways Mitigations

3.81 Post implementation of sustainable transport measures as detailed above in Figure 3.15, there are a number of highways junction improvements which will need to be made connected to the impact of new growth across the Borough. These are detailed below in Figure 3.16.

Figure 3.16: Highways Mitigations

Location	Detail
M25 Junction 29 Brentwood Enterprise Park link road	Potentially a new link road required to access Brentwood Enterprise Park
A128 Ingrave Road / The Avenue	Junction mitigation measures - Double Mini-Roundabout - Widening of exit taper onto A128 Ingrave Road, Widening to three lanes between Junction 15 and 16.
A128 Brentwood Rd / Running Waters	Junction mitigation measures - Double Mini-Roundabout - Widening of A128 Brentwood Road to increase stacking capacity up to the roundabout.

Roman Road / A12 Slip	Junction mitigation measure - staggered priority - A12 Slip road widening to provide dedicated left and right turn lanes. Traffic signals implemented
A127 / A128 Brentwood Road / A128 Tilbury Road	Junction mitigation measures - Grade Separated Gyratory - Installation of signals at the end of the A127 westbound off-slip
Junction 27 A128 - Tilbury Road / Station Road	Junction mitigation measure - priority - Station Road widening to provide dedicated left and right turn lanes.

FINANCIAL IMPLICATIONS

- 3.82 Part B of the IDP outlines indicative costs associated with the various transport mitigation measures. Further work will be required on updating the costs as the Local Plan and its various supporting transport projects move forward.

04 Energy



OVERVIEW

- 4.1 The Council commissioned the University of Exeter to undertake a renewable energy study for the borough in 2014.¹ This study provides some useful insights into the current energy demand and carbon emissions in the Borough. Using sub-national energy statistics to 2011², the following findings are worth noting:
- Approximately half of all energy used was for transport, of which a fifth (10% of the Brentwood total) was due to road transport on the M25;
 - A third of energy used was for the domestic sector, with the remaining 18% of energy use in the commercial and industrial sectors;
 - Within the commercial and industrial sector the main fuel used was electricity (44%), followed by gas (36%) and petroleum products (17% - which is likely to be entirely due to the industrial sector).
 - Within the domestic sector approximately three quarters of energy use was gas, with almost all of the remainder electricity – there was a very small amount of oil use in homes.
 - Excluding energy use to the M25, the breakdown of energy use is 20% in the commercial and industrial sector; 37% in the domestic sector and 43% in the transport sector.
- 4.2 As an overview of the domestic, commercial and industrial energy use, the National Heat Map,³ provides a set of electronic maps showing heat demand from buildings. Figure 4.1 provides selected topic maps for Brentwood Borough, which indicates when comparing the proportion of dwellings at a LLSOA level, that high energy consumption is lowest where there are generally high proportions of terraced housing and flats. The majority of flats are located within the town of Brentwood. Brentwood has similar proportions of semi-detached houses and flats compared to the national average, though a much greater proportion of detached houses at the expense of terraced

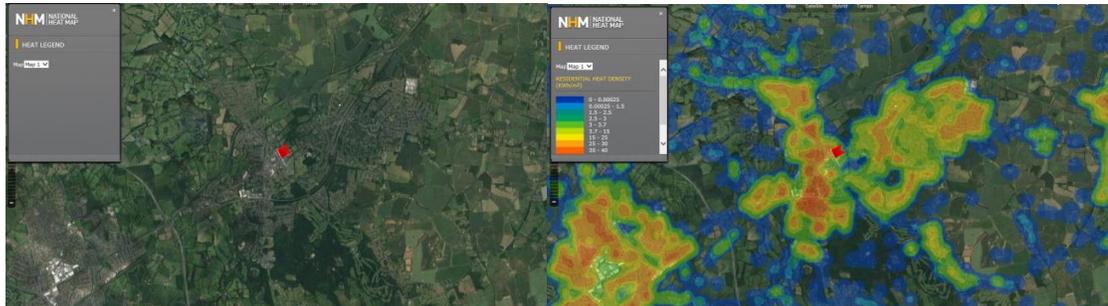
¹ University of Exeter – Renewable Energy Study for Brentwood Borough Council April 2014 – D Lash & A D S Norton

² <https://www.gov.uk/government/organisations/department-of-energy-climate-change/series/sub-national-energy-consumption> (accessed 09/10/13)

³ <http://tools.decc.gov.uk/nationalheatmap/> (accessed 21/02/16)

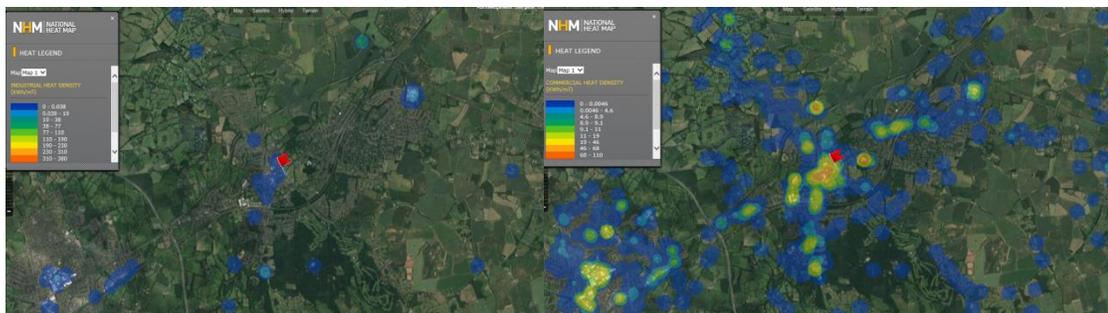
houses. This pattern of house types is likely to be related to its historical economic base and proximity to London.⁴

Figure 4.1: Heat Maps



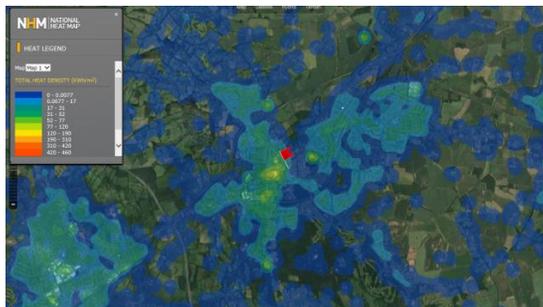
Brentwood Urban– No Energy Info

Brentwood Urban Residential Heat Density



Brentwood Urban – Industrial Heat

Brentwood Urban – Commercial Heat



Brentwood Urban – Total Heat Density

4.3 Statistical information from the Department for Business, Energy and Industrial Strategy (BEIS)⁵, indicates that the Brentwood Borough has relatively high levels of domestic gas and electricity consumption. Over the period 2010 -2015, Brentwood had the highest level of domestic customer mean gas consumption in the County and was also significantly higher than the England and East of England averages for the same period. Electricity usage for Brentwood ranks about 4th in the County and also significantly higher than the England and East of England averages for the period 2010-2015. Further information is detailed below in Figure 4.2 One of the reasons for the higher domestic energy use in Brentwood is generally that homes in the Borough are

⁴ Information reproduced from the University of Exeter study – also see pp10-13 for further analysis

⁵ BEIS Sub-national consumption statistics

13% larger than homes in England on average. Domestic emissions are sensitive to the weather, though over time have fallen mainly due to the impact of improved energy efficiency.⁶

Figure 4.2: Average Domestic Electricity and Gas Use (2010-2015)

Area	Average Domestic Electricity Consumption Per Household (kWh) 2010-2015	Average Domestic Gas Sales Per Meter (kWh) 2010-2015
Brentwood Borough	4627	17,034.50
Essex Average	4420	14,679.50
East of England	4281	14,099
England	3998	13,901

4.4 While this is a brief snapshot of Brentwood now, it is predicted that the energy landscape in the UK over the next 10 to 20 years will change significantly to a lower carbon system. Potential macro drivers of change include:

- technological innovation and investment to convert energy more efficiently, with a possible move to more locally produced or decentralised energy;
- domestic security and managing fluctuating fuel prices and disruptions to fuel supplies;
- a flexible range of reliable supplies to respond to energy peaks and demands;
- responding to the challenges of climate change and reducing the use of carbon-rich fuels;
- affordable energy supply to both suppliers and end customers
- societal change, including adaptation to new technology and use of energy.⁷

⁶ Information taken from P.8 University of Exeter – Renewable Energy Study for Brentwood Borough Council April 2014 – D Lash & A D S Norton

⁷ Insights from Innovate UK - <https://innovateuk.blog.gov.uk/2018/03/06/predictions-the-future-of-energy/> and <https://www.edfenergy.com/future-energy/uk-energy>

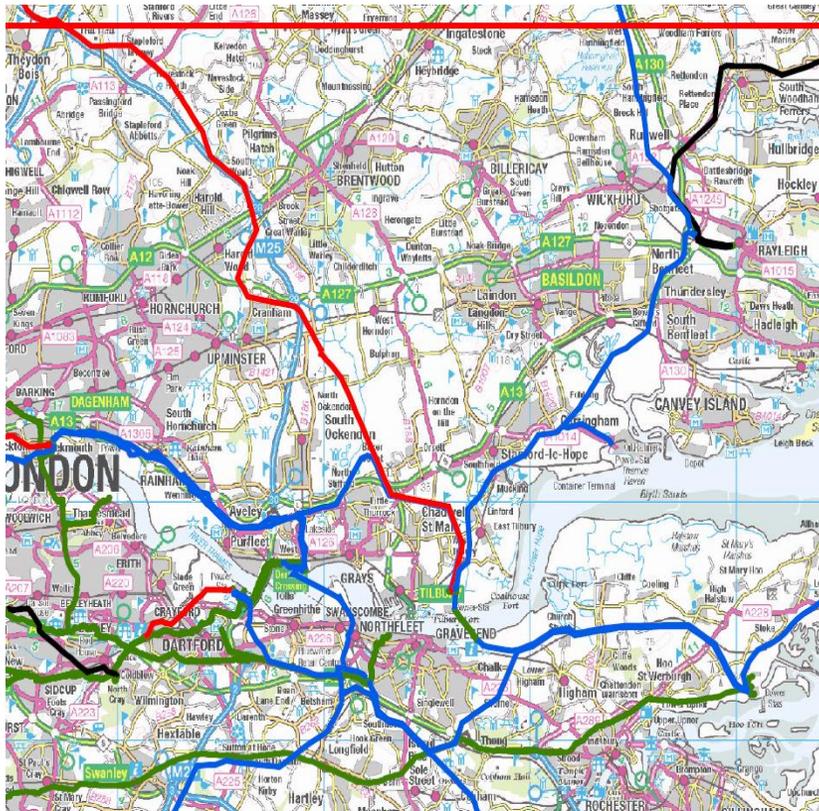
EXISTING INFRASTRUCTURE, GAPS AND PROJECTS

Electricity Transmission and Distribution – Existing Infrastructure

- 4.5 National Grid owns and operates the high voltage electricity transmission system in England and Wales providing electricity supplies from generating stations to local distribution companies. To facilitate competition in the supply and generation of electricity, National Grid must offer a connection to any proposed generator, major industry or distribution network operator who wishes to generate electricity or requires a high voltage electricity supply.
- 4.6 Often proposals for new electricity projects involve transmission reinforcements remote from the generating site, such as new overhead lines or new development and substations. If there are significant demand increases across a local distribution electricity network area, then the local network distribution operator may seek reinforcements at an existing sub-station or a new grid supply point. In addition, National Grid may undertake development works at its existing substations to meet changing patterns of generation and supply. UK Power Networks owns and operates the local electricity distribution network within the Brentwood Borough Council administrative area.
- 4.7 The electricity transmission network carries large quantities of electricity across long distances through cables and overhead lines. The electricity transmission network carries high voltages of electricity at up to 400kV, which is more than 1,600 times the average domestic supply.⁸ Figure 4.3 below provides information (indicated in red) on the National Grid Overhead High Voltage cable route, as it applies to part of the South Essex area. It can be noted that there is one main route which are of relevance to the Brentwood area, namely: ZB Route - 275kV two circuit route from Waltham Cross Substation in Epping Forest to Warley substation in Havering (route to the west of the Borough).

⁸ *Energy Networks Association ; Guide to the UK and Ireland Energy Networks*

Figure 4.3 National Grid Overhead High Voltage Cables



4.8 UK Power Networks owns and operates the local electricity distribution network within the Brentwood area. The electricity distribution network takes energy from the wires of the electricity transmission network and converts it into lower voltage so that it can be safely delivered to homes and businesses. In general terms, the boosted 275,000V electricity transmission is reduced to 132,000V for the local Distribution Network Operator (DNO) and then reduced again to commercial and household use (ranging from 33,000V to 230V). Substations are where electricity lines are connected and switched and where voltage is changed by transformers. The range of typical substations is outlined below ⁹:

- National Grid – large substations where 400kV and 275kV lines are switched and electricity transformed down to 132,000V;
- Sealing End Compounds – where an overhead line joins onto an underground cable;
- Intermediate Substations – smaller than National Grid sub stations and transform electricity between 132,000V, 33,000V and 11,000V;

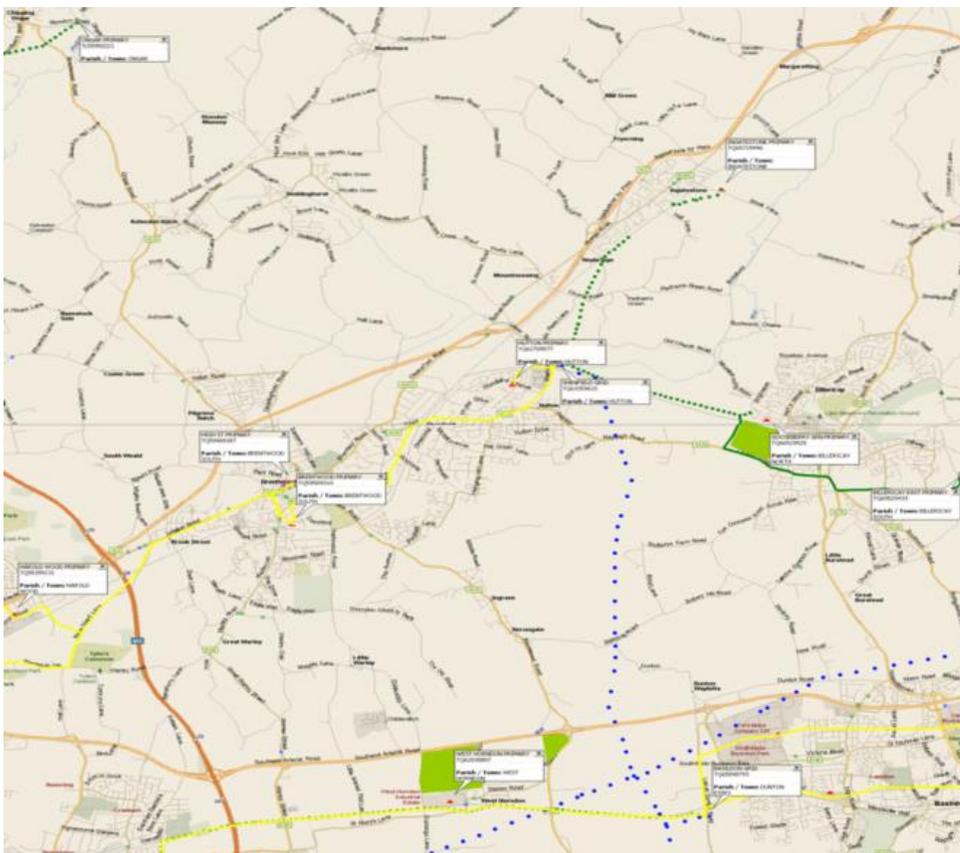
⁹ *Typology extracted from EMFS.info*

- Final Distribution Substations – transform the electricity from usually 11,000V to 230V for domestic usage.

4.9 The UK Power Network Regional Development Plan (Barking, Warley and West Thurrock) reviews the UKPN Grid Supply Points (GSP) which supply the London Borough's of Barking & Dagenham, Havering and the Essex boroughs of Thurrock and Brentwood. The combined area has approximately 201,000 customers and is generally a dense urban part of Outer London and Essex.¹⁰

4.10 The area is supported from two National Grid infeeds (Warley and Tilbury) to the UK Power Networks 132kV system. There are two main Grid substations (Shenfield and Basildon) connected to nine primary substations across the Brentwood and surrounding area. These are detailed below in Figure 4.4 (small red triangles)¹¹. Figure 4.5 (below) also provides a more thematic overview.

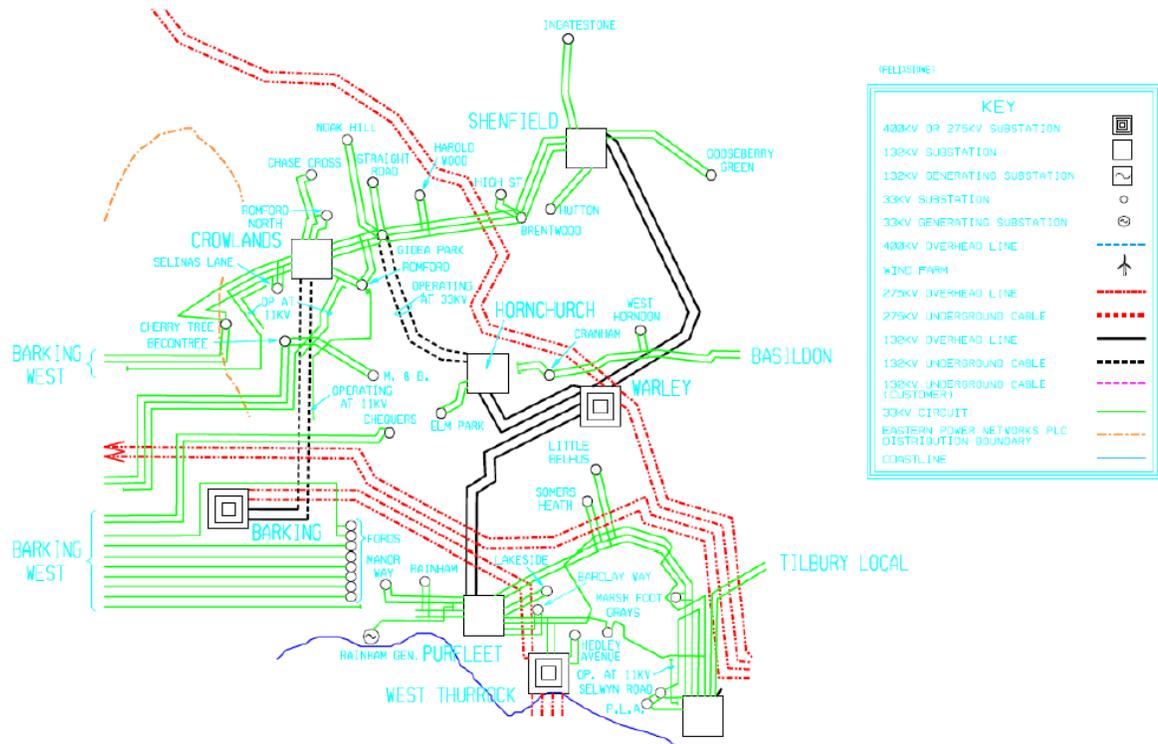
Figure 4.4: Primary sub-stations



¹⁰ Information source - <http://library.ukpowernetworks.co.uk/library/en/RIIO/>

¹¹ Map courtesy of UKPN.

Figure 4.5: UKPN Electricity Distribution Network



4.11 The winter demand figures for 2016/17 are detailed in Figure 4.6 and whilst these are representative the readings can fluctuate year on year by up to 10% due to the length and intensity of the winter cold spell that occurs¹². This table highlights sufficient capacity compared to demand for the period indicated.

¹² Information and table supplied by UKPN.

Figure 4.6: Substation Operating Capacity and Winter 2017/17 Demand

Substation	Operating Voltage	Winter Capacity 2017	Winter Demand 2016/17
		(MVA)	(MVA)
Brentwood Primary	33/11kV	24	15.3
Gooseberry Green Primary	33/11kV	15	11.2
Harold Wood primary	33/11kV	23	11.6
High Street Primary	33/11kV	19	14.6
Hutton Primary	33/11kV	19	14.8
Ingatestone Primary	33/11kV	13	8.8
Langdon Primary	33/11kV	24	8.2
Ongar Primary	33/11kV	20	18.1
West Horndon Primary	33/11kV	6	6
Basildon Grid	132/33kV	114	48
Shenfield Grid	132/33kV	114	88
Warley Exit Point National Grid	400/132kV	560	265
Tibury Exit Point National Grid	400/132kV	144	120

Electricity Transmission and Distribution – Gaps in Existing Provision

- 4.11 Much of the Borough’s electricity network and substations were originally built during the 1950’s and early 1960’s and whilst a substantial amount of work has been done in the last 10 years to address asset ‘health’ issues there remains a challenge to update and replace the network to deliver a network suitably appropriate for this area.
- 4.12 The UKPN Regional Development Plan (RDP) recognises that the potential commercial electricity users within the Thames Gateway area and London financial districts with nearby data centre requirements demands high electricity volume / usage. The RDP also recognises, that the overall area is also identified for substantial housing development.

Electricity Transmission and Distribution – Potential Projects or Plans

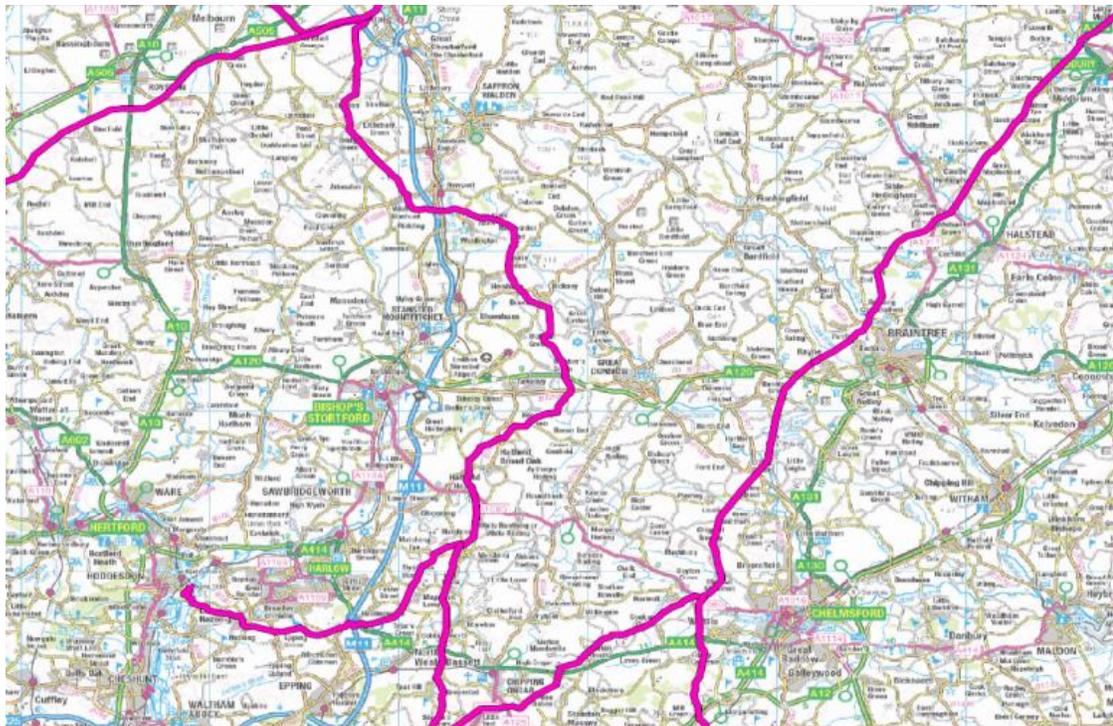
- 4.13 Looking ahead for the remainder of the OFGEM ED1 review period there are plans to replace a 33/11kV transformer at High Street Primary and possibly at West Horndon Primary as well. The replacements will provide coincidental reinforcement as new transformers sizes will be larger than those being replaced. The 33kV switchgear at Shenfield Grid is under review for replacement, though this will improve reliability rather than provide additional network capacity. The 11kV switchgear at Hutton primary is also still in the plan to be replaced. The Grid substation at Basildon has recently undergone a major refurbishment with new transformers and some new switchgear, increasing the capacity at the site substantially. At the UK Power Networks / National Grid (NG) interface there are ongoing discussions to review the connection

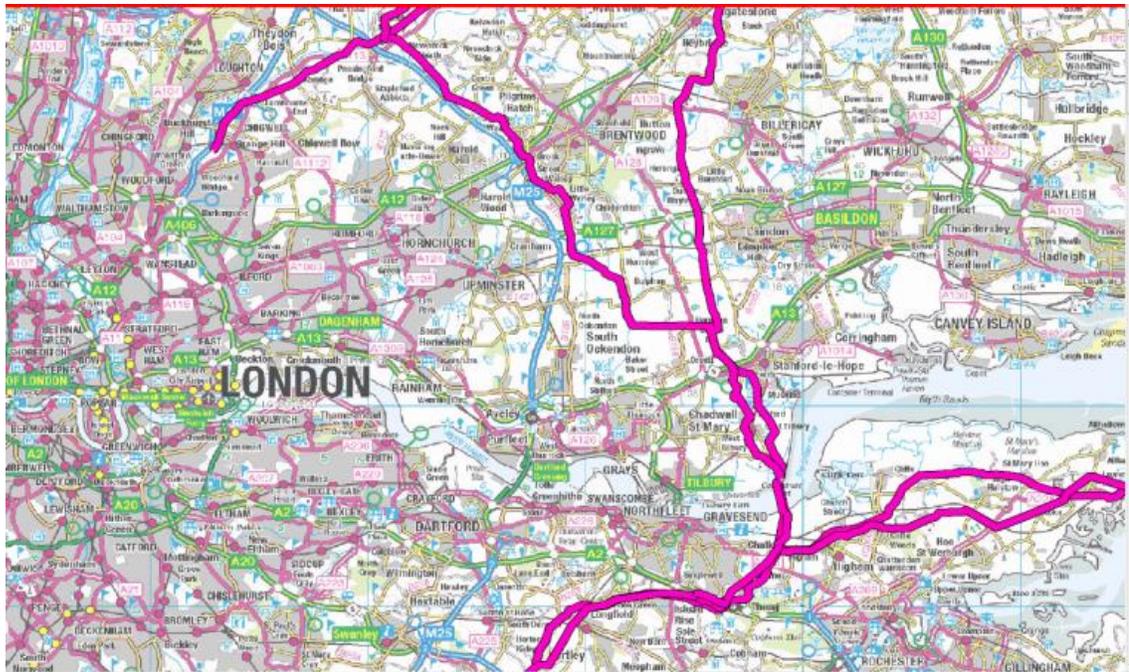
of the NG assets at Tilbury. Information with the site promotor for Dunton Hills Garden Village, has indicated that the pylon infrastructure across this potential development site is nearing the end of its life and may need replacement.

Gas Transmission and Distribution – Existing Infrastructure

- 4.14 National Grid has a duty to develop and maintain an efficient and economical transmission system for the conveyance of gas and respond to requests for new gas supplies in certain circumstances. In the UK, gas leaves the transmission system and enters the distribution networks at high pressure. It is then transported through a number of reducing pressure tiers until it is finally delivered to consumers.
- 4.15 The national transmission high pressure gas pipelines which are of relevance to the Brentwood Borough are detailed below in Figure 4.7 and are namely pipeline FM18 – Stapleford Tawney to Tilbury Thames North (36” diameter pipeline running from the north west of the Borough (running south of South Weald and then onwards running near Great Warley and onwards and FM05 – Braintree to Horndon (36” diameter pipeline running from the north east of the Borough - north of Ingatestone, east of Hutton and then onwards south through the eastern edge of the proposed Dunton Hills Garden Village to near Horndon.

Figure 4.7: National Transmission High Pressure Gas Pipelines





- 4.16 The Borough also has a series of gas distribution apparatus within the administrative area of Brentwood Borough. This includes Low Pressure (LP) and Medium Pressure (MP) Gas Pipes and associated equipment and six High pressure (HP) (above 2 bar gas pipelines) and associated equipment. The exact details on this gas distribution apparatus has not been collected for the IDP to date but would be a useful inclusion.

Gas Transmission and Distribution – Gaps in Existing Provision and Projects / Plans

- 4.17 The National Grid Gas Ten Year Statement (2015) sets out the impact of changing customer requirements, future energy scenarios, legislative changes, asset health on the future operation and development of the National Transmission System. The thematic map for the Eastern Area and North Thames indicates no major gaps in provision with no new or upgraded NTS pipelines currently planned. This information is detailed below in Figure 4.8. No information on works planned for distribution pipelines was available at the time of print.

Figure 4.8: National Transmission System (NTS)

Figure A1.8
Eastern (EA) – NTS

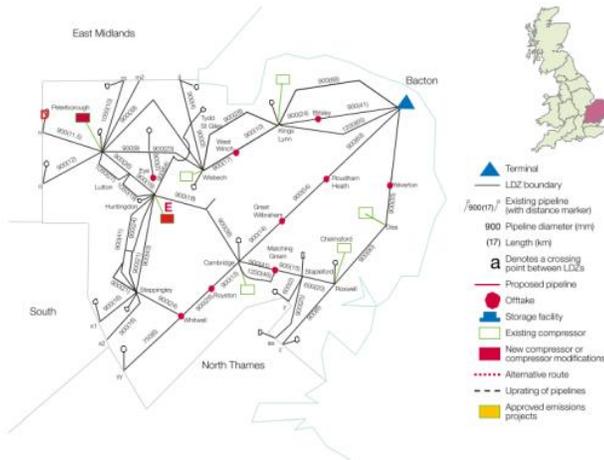
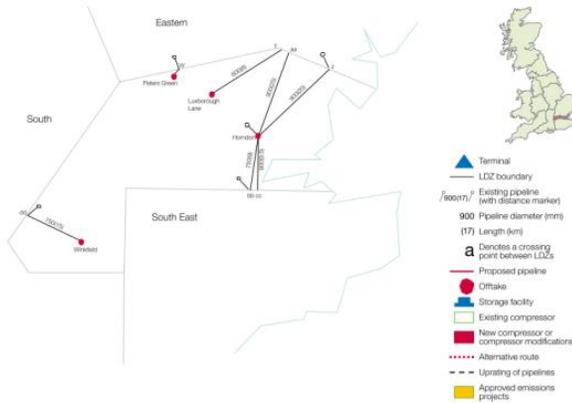


Figure A1.9
North Thames (NT) – NTS



Renewable and Low Energy – Existing Infrastructure

4.18 There is currently one major renewable energy unit within Brentwood Borough at Dunton Hills Farm and consists of a single 500kw wind turbine. Figure 4.8 details the current renewable energy planning permissions within Brentwood Borough.¹³

Figure 4.8: Renewable Energy Permissions

Location	Type of Development	Forecast Energy Generation	Potential Housing Supply (Estimate Only)	Status

¹³ Planning permissions were last reviewed in 2017 and a further review should be undertaken shortly.

Dunton Hills Farm Tilbury Road West Horndon Essex CM13 3LT	Installation of a single 500kw wind turbine.	500kw	300 ¹⁴	Decision notice 11 th Feb 2014. Now built.
Orchard Farm Little Warley Hall Lane West Horndon Little Warley Essex CM13 3EN	Installation and operation of a ground mounted solar PV system with a capacity of up to 250kW	250kw	62 ¹⁵	Decision notice 5 th Aug 2013 Conditions not discharged.
Hawthorn Cottage 2 Old Church Road Mountnessing Essex CM13 1UP	Installation and operation of a solar array with a capacity of up to 4kW on agricultural land at Hawthorn Cottage	4 kw	1	Decision notice 7 th April 2015. Conditions not discharged.

Renewable and Low Energy – Gaps in Provision

4.19 For a small Borough with limited renewable energy projects it is difficult to forecast gaps in current provision. However, when considering renewable energy potential this was analysed for Brentwood in the University of Exeter study based predominately on a capacity study undertaken for the East of England by AECOM in 2011.¹⁶ The methodology of the study is based upon a sequential constraint approach in which constraints are progressively introduced to reduce the naturally available resource to those that are constrained by planning and regulation. The scope from the original assessment included district heating (DH) and combined heat and power (CHP), large scale onshore wind, hydro energy, biomass covering a range of fuels, energy from waste (EfW) and microgeneration technologies including small scale wind, solar, and heat pumps. The output from this assessment has been extracted in the University of Exeter Study for the Brentwood Borough area.

4.20 Some of the key non-sites specific findings from this analysis are noted below:

- There is unlikely to be major heat density areas in the Borough suitable for retrofit only district heating schemes – new development may therefore play an important role in heat network development.

¹⁴ Based upon Renewable UK formulae with a load factor of 0.273 for onshore wind power and average annual household consumption of 3.938 MW.

¹⁵ Based upon estimates that 3800 KW equates to roughly the average household electricity consumption per annum, and the output from a 4kWp solar system in the South of England is roughly 3.8MW - www.energysavingtrust.org.uk.

¹⁶ http://www.sustainabilityeast.org.uk/index.php?option=com_content&view&id=113&Itemid=92 (accessed originally on 18/10/13)

- District heating is a viable and zero carbon energy solution for new development – evidence from the Carbon Trust indicates that district heating can be viable on sites with as few as 200 homes (estimate of over 60% of energy generated could be applied to major developments and CHP schemes).
- In general, it is assumed that most homes that are currently using oil or solid fuel could switch to biomass boilers – there is broadly a match between the technical capacity to deliver biomass from managed local woodlands and domestic demand but commercial and industrial demand this may result in the Borough becoming a net importer of biomass (could account for almost 27% of energy generated).
- Commercial scale wind turbines (2.5 MW) could generate significant energy generation and carbon reduction – 5 commercial turbines could deliver 30% of energy generated.
- Standalone PV developments could generate approximate 7% of energy generated with heat pumps and solar technologies at about 8.5% each.

Low Energy Options – Potential Projects and Plans

- 4.21 Outside of any policy and site requirements set out in the Local Plan, there are no major proposals for renewable or low energy projects and associated infrastructure within the Borough.

IMPLICATIONS OF GROWTH

Electricity

- 4.22 Feedback on behalf of the National Grid has highlighted that the ZB high voltage overhead line cross a small part of Brentwood Enterprise Park (ref 101A) proposed allocation. National Grid prefers that buildings are not built directly beneath its overhead lines. This is for two reasons, the amenity of potential occupiers of properties in the vicinity of lines and because National Grid needs quick and easy access to carry out maintenance of its equipment to ensure that it can be returned to service and be available as part of the national transmission system. Such access can be difficult to obtain without inconveniencing and disturbing occupiers and residents, particularly where properties are in close proximity to overhead lines.
- 4.23 National Grid seeks to encourage high quality and well-planned development in the vicinity of its high voltage overhead lines. Land beneath and adjacent to the overhead line route should be used to make a positive contribution to the development of the site and can for example be used for nature conservation, open space, landscaping areas or used as a parking court. The relocation of existing overhead lines will only be considered by National Grid as part of nationally important projects and appropriate

safety clearances between overhead lines, the ground and built structures must not be infringed.

- 4.24 Feedback from UKPN indicates that the proposed level of housing that most will be accommodated without the need for reinforcement of major substations and individual developments will be connected with local reinforcement and network extensions. This does assume that properties will still be heated by gas fired central heating and not direct acting or storage heaters. The introduction and effect of Electric Vehicles (EV's) has not been considered on the distribution network at the current time. The Dunton Hills proposed settlement is well located near to Langdon and West Horndon Primary substations and therefore no major reinforcement is envisaged¹⁷. Network extensions are likely to be needed from the Langdon Primary substation that is located at the Basildon Grid site.¹⁸
- 4.25 There will also be a need to consider electricity load requirements associated with future electronic domestic and commercial vehicle re-charging, although some of the extra demand may be countered by off-peak programming.

Gas

- 4.25 Feedback on behalf of National Grid has indicated that a high-power gas transmission pipeline runs across a small southern section of Land East of Nags Head Lane (ref 32) allocation; within the extreme eastern boundary of Dunton Hills Garden Village (ref 200) proposed allocation area and within the eastern edge of the proposed Brentwood Enterprise Park allocation (ref 101A). National Grid requests that any High Pressure Major Accident Hazard Pipelines (MAHP) are taken into account when site options are developed in more detail. These pipelines form an essential part of the national gas transmission system and National Grid's approach is always to seek to retain existing transmission pipelines in situ. National Grid may also have a Deed of Easement for each asset which prevents the erection of permanent/ temporary buildings, or structures, changes to existing ground levels, storage of materials etc.
- 4.26 Further information will be required on investment required in lower pressure gas pipelines and associated equipment.

Low Energy Options

- 4.27 There are opportunities to explore the delivery of renewable energy infrastructure, including district heating schemes linked to new strategic developments. Strategic level sites which may be considered suitable for district or localised heating schemes include:

- Dunton Hills Garden Village

¹⁷ Preliminary assessment by consultants on behalf of CEG for Dunton Hills has indicated that electricity supply and reinforcement works may be required - A 1x18MVA 33/11kV primary substation / A 20x100 Kva HV/LV Secondary Substation. (Inc up to 500m of HV cable per substation installed in ducts around the site..

¹⁸ Feedback provided by UKPN dates from 2017 and is in connection with a slightly different range of sites to the current Local Plan. No additional feedback / information has been obtained from this date.

- Brentwood Enterprise Park
- West Horndon Industrial Estate sites
- Officer's Meadow and linked sites
- Ford and Council Depot

FINANCIAL CONSIDERATIONS

- 4.28 **Electricity** - UKPN has a programme of infrastructure improvements outlined in previous sections, with much of the information commercially sensitive. There is further detailed information required on whether substation reinforcements are necessary as part of the Dunton Hills Garden Village development. It is also understood that there may be an opportunity to either upgrade or underground ageing pylon infrastructure across parts of the Dunton Hills site, but this needs to be formally confirmed, as well as costs and liabilities.
- 4.29 **Gas** – no major financial considerations indicated at this stage although localised pipelines may need to be extended and reinforced linked to development sites.
- 4.30 **Low Energy and Renewables** – detailed information on district heating cost options will be project specific and need to be subject to feasibility analysis and comprehensive project / cost planning. Research undertaken in 2010 on the cost per dwelling of district heating schemes with combined heat and power units suggested a cost of circa £3500 to £8000 per dwelling (depending upon dwelling type).¹⁹ Smaller scale Combined Heat and Power (CHP) Schemes have a potential capital costs of circa £8,000 per house (depending upon scale of project).²⁰ Research has also recently been undertaken by AECOM and the Energy technologies Institute on reducing the capital costs of district heat network infrastructure.²¹
- 4.31 Part B of the IDP includes some pre-feasibility high level cost estimates of capital costs for the per unit 'additionality costs' of district heating / CHP linked to the proposed strategic site allocations, in line with Local Plan policy. These figures should be treated as an outline guide only. The cost estimates for Dunton Hills applies for the whole scheme (3500 units).
- 4.31 **Site Development** – there are site layout costs associated with easements and development restrictions in relation to allocation sites 32, 101A and 200.

¹⁹ AECOM – Hertfordshire Renewable and Low Carbon Energy Technical Study 2010

²⁰ <https://www.homebuilding.co.uk/district-heating/>

²¹ AECOM and Energy Technologies Institute 'Reducing the capital cost of district heat network infrastructure' October 2017

05 WATER AND DRAINAGE



OVERVIEW

- 5.1 This chapter of the IDP provides an overview of water and drainage infrastructure. It is supported by updated SFRA and Water Cycle Information¹. The updated SFRA incorporates new data for strategic level flood risk assessment and provides updates in relation to national policy and guidance together with Environment Agency guidance on climate change allowances. Both the updated SFRA and WCS are used extensively as part of the commentary to this chapter. For further detailed information, please refer to the original documents as part of the Council's evidence base.
- 5.2 At a local level, the Essex Local Flood Risk Management Strategy (LFRMS) was developed in 2013 providing local flood risk management co-ordination for Essex. The South Essex, North Essex and Thames Catchment Management Plans (CFMPs) provide an overview of flood risk across each river catchment and recommend ways of managing those risks now and over the next 100 years. The Thames and Anglian River Basin Management Plans (RBMPs) ensure the protection and improvement of the water quality.
- 5.3 The NPPF covers a full range of planning issues in relation to managing flood risk with further guidance available through the NPPG.²
- 5.4 Essex County Council has responsibility for managing flood risk from local sources (surface water, groundwater and ordinary watercourses) and ensuring that any Sustainable Urban Drainage Systems (SuDS) are of appropriate design standards and have clear arrangements for maintenance over the development's lifespan. Flooding from main rivers, the sea and from reservoirs are the responsibility of the Environment Agency.

¹ SFRA and WCS Updates 2018

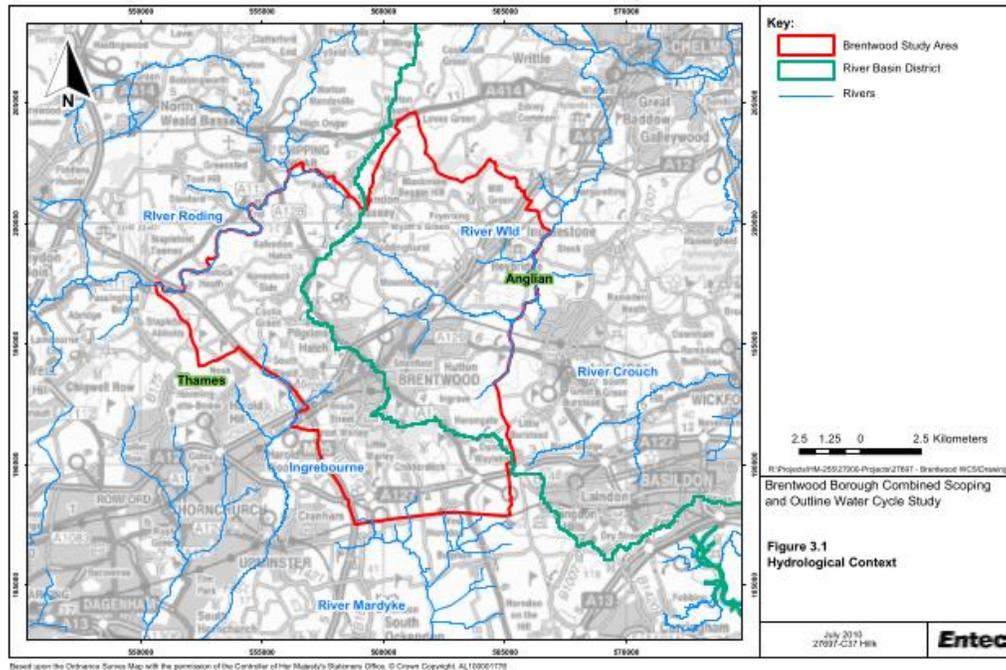
² Para references to add

Topography and Watercourses

- 5.5 The topography of the area ranges from approximately 100m Above Ordnance Datum (AOD) in the north and central regions, to approximately 10mAOD in the south of the Borough. The Brentwood Urban Area and adjoining built up area is located on gently undulating ridge. Therefore, there are no major water courses running through this built-up area. The tributaries of the River Wid flow in the shallow valley between the wider built-up area of Brentwood and large village of Ingatestone. Therefore, there are no significant areas of fluvial flood risk within the existing built-up area.
- 5.6 The Borough forms the headwaters of four key watercourses which drain the area: the River Wid, the River Ingrebourne, the River Roding and the River Mardyke. The River Wid is the main catchment in the Borough and is located on the eastern boundary of the Borough. It flows in a south to north direction. The river eventually joins the River Can in Chelmsford, which itself joins the River Chelmer becoming the River Blackwater before entering the North Sea. The catchment of the River Wid and associated tributaries covers over 50% of the total area of Brentwood.
- 5.7 The River Roding and associated tributaries drain the west of the Borough (approximately 15% of the total Borough area) and form its north western boundary. The river flows in an approximate south westerly direction eventually joining the River Thames via Barking Creek.
- 5.8 The River Ingrebourne system drains the south-western part of the Borough (approximately 15% of the total area of the Borough). The river flows south and joins the Thames at Rainham; and the River Mardyke system which drains the extreme south of the Borough via numerous small tributaries (approximately 15% of the total area of the Borough). The Mardyke flows south then to the west and joins the Thames near Purfleet.
- 5.9 Other watercourses of interest include the Ingatestone Hall Brook in the north-east, the Stondon Hall Brook in the north-west and the Ingrebourne Brook in the west. The main watercourses in the Borough are outlined below in Figure 5.1.³

³ Further information on watercourses is available in the SFRA Update.

Figure 5.1 Water Courses



Historic Flood Risk Events

- 5.10 The extent of historic flooding in the Borough has generally been concentrated upon:
- rapid surface water runoff and ponding in areas such as low-lying roads;
 - Multiple recorded flooding events from the River Roding in the north east of the Borough

Flood Risk Modelling

- 5.11 The extent of modelling flood risk as detailed on the Environment Agency flood map for the Borough is detailed below in Figure 5.2. Overall the Flood Zones are confined close to the watercourses from which they originate and are not extensive for the Brentwood Borough. This flood zone information is generally sufficient to inform spatial planning however for site specific applications further flood risk information may also be required.

Figure 5.2: Flood Risk Zones

To insert

- 5.12 There are also watercourses within the Borough which are not currently modelled and advice from the SFRA consultants is that it would be prudent to use the surface water maps along the watercourses of these unmodelled main rivers and all ordinary watercourses as a proxy for Flood Zone 3 in lieu of more detailed modelling or site-specific assessment.

Tidal, Groundwater and Reservoirs

- 5.13 The Borough is not at risk from coastal flooding and there are no reported incidences of reported of groundwater flooding.

Surface Water Flooding

- 5.14 Surface water flooding is the term used for flooding that occurs when intense rainfall overwhelms the ability of the land to infiltrate water, sewers and road drains. Figure 5.3 below highlights updated surface water flood risk data which indicates the settlements of Brentwood, Blackmore, Doddinghurst and Ingatestone in particular may all contain areas which are potentially vulnerable to surface water flooding. Key road infrastructure such as the A12 is also shown to be vulnerable in places with a history of flooding in parts.

Figure 5.3: Surface Water Flooding

To Insert

Climate Change

- 5.15 Managing climate change and associated heightened flood risks are a key element of the NPPF. Figures 5.4 and 5.5 below provide an indicative assessment of how climate change may impact on Flood Zone 3 and ordinary / unmodelled watercourses across the Borough.

Figure 5.4 Climate Change and Flood Zone 3

To Insert

Figure 5.5 Climate Change and Ordinary / Unmodelled Watercourses

To Insert

- 5.16 Figure 5.6 below summarises the key messages from the updated flood risk assessment for Brentwood.

Figure 5.6: Summary of Flood Risk

Type/Source of Flooding	Risk?	Description
Fluvial Flooding	Yes	Some flooding along eastern boundary of Borough from the River Wid and from Stondon Hall Brook and the River Roding in the north west of the Borough.
Surface Water Flooding	Yes	Affects numerous areas across the Borough. Mostly consists of land drainage issues causing flooding to public highway most notably on the A12 north west of Brentwood and on roads around Ingatestone.
Groundwater Flooding	No	No historic records of this type of flooding within the Borough. Available data suggests this is not thought to be a source of flooding.
Tidal Flooding	No	Elevations put Borough outside of any tidal flood risk zone.
Artificial	No	Not at risk from reservoir sources, limited data on sewer flooding but appears to be due to surface water risk.

Quality of Watercourses

- 5.17 It is noted that water quality of rivers, lakes and groundwater is a good indicator of their general health in terms of their ecology, biodiversity and amenity. The chemical status and status of the physico-chemical elements of ecological status are both helpful in understanding the overall water quality.⁴
- 5.18 The Water Cycle Study (WCS) update which accompanies the Local Plan undertook an investigation into water quality in line with the Water Framework Directive objectives (WFD). The WFD is a key directive that seeks to protect and improve the water environment and its ecology. Its overarching aim is to prevent deterioration in the status of water bodies and to achieve 'Good Status' for rivers, lakes, coastal waters and groundwater by no later than 2027. Impacts on water resources were also reviewed in the WCS in line with the water companies Water Resource Management Plans.
- 5.19 The Anglian and Thames River Basin Management Plans (RBMPs) cover the Borough. To the East is the Combined Essex catchment of the Anglian RBMP, encompassing the rivers and tributaries of the Stour, Colne, Pant/Blackwater, Chelmer, Crouch and

⁴ Information taken from p.35 of the Brentwood Scoping and Outline Water Cycle Study – Final report January 2011 – further technical information is available in this report on chemical and ecological status elements.

Roach, along with the smaller catchments of Sixpenny, Tenpenny, Holland and Asheldham Brook and. To the South and West the area is covered by two catchments of the Thames RBMP; the Roding, Bream and Ingrebourne and South West Essex catchments, predominantly covering the Mar Dyke. Physical modifications due to urbanisation, agricultural runoff, urban runoff, abstraction for water supply and barriers to fish movement play a key role in determining the status of rivers and lakes in these catchments.

- 5.20 Recently completed and current improvement projects linked to the main water bodies associated with the Brentwood area (none of the projects are within the Borough) include:
- River Wid – willow bank protection and other measures at Buttsbury (completed);
 - River Ingrebourne – project to tackle polluted water from an outlet;
 - River Mardyke – improvements to the flood plain grassland and in-channel habitats within the floodplain.

5.21 The five Waste Water Treatment Works affected by future growth are located within five water bodies and within three operational catchments. The Environment Agency has indicated that all five of the waterbodies are classified as less than good in terms of ecological status. The key elements found to be less than good include: fish, invertebrates, macrophytes and phytobenthos combined, BOD, phosphate and ammonia. Further baseline data is detailed below in Figure 5.7.

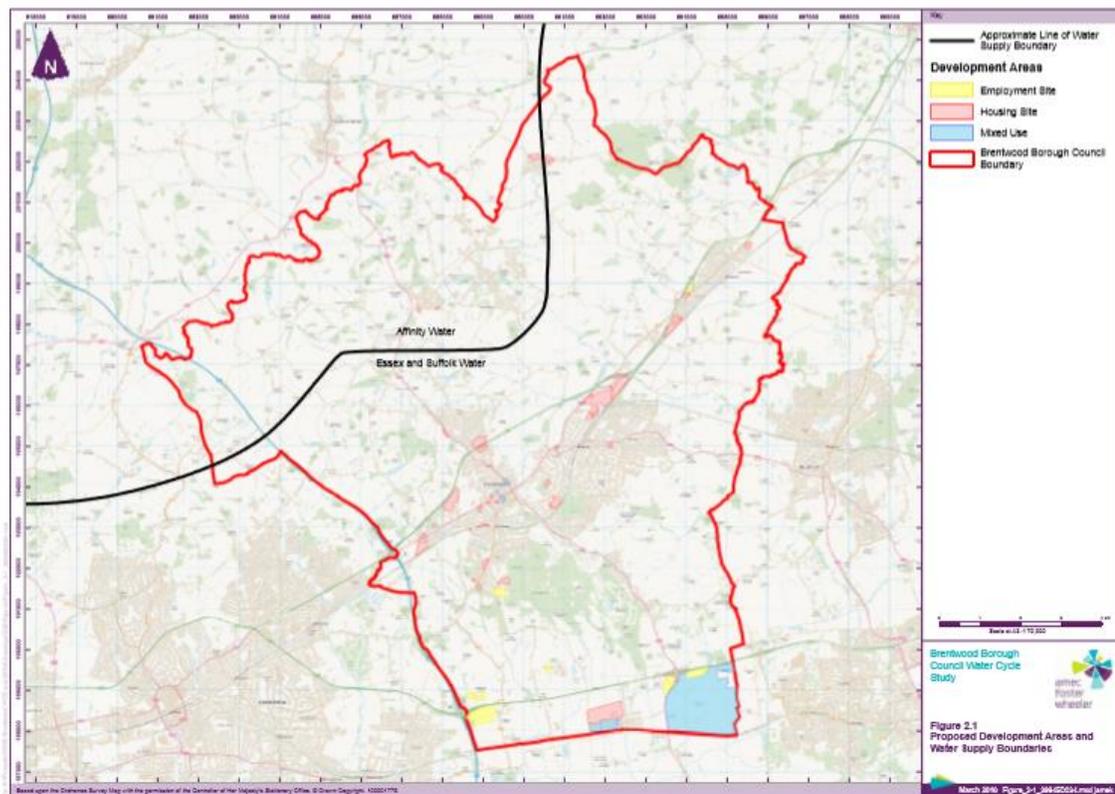
Figure 5.7: Ecology Status of Operational Catchment Area

WwTW	Water Body ID and Water Body Name	Operational Catchment	Overall Status 2016 Cycle 2
Doddinghurst	GB105037028720 - Doddinghurst Brook	Chelmer	Poor
Shenfield	GB105037028680 - Wid (Doddinghurst Brook - Shenfield STW)	Chelmer	Poor
Ingatestone	GB105037028690 - Wid (Ingatestone Hall - Margareting Hall)	Chelmer	Moderate
Upminster	GB106037028080 - Mardyke (West Tributary)	Mardyke	Moderate
Brentwood	GB106037028130 - Ingrebourne	Roding Beam and Ingrebourne	Moderate

Potable Water Supply

- 5.22 Essex as a whole is identified as an area of Serious Water Stress (Identifying Areas of Water Stress, Environment Agency 2007). Brentwood Borough is served two Water Supply Undertakers (Water Companies), Essex and Suffolk Water (ESW) accounting for three quarters of Brentwood Borough and the remainder in the northern rural area surrounding Doddinghurst and Kelvedon Hatch is served by Affinity Water (previously Veolia Water Central). Figure 5.6 provides an outline of water supply areas for the two companies.

Figure 5.6: Water Supply



- 5.23 ESW and Affinity Water apply a twin tracked approach to maintaining water supplies through a combination of demand management and water supply schemes and initiatives.
- 5.24 The water resources within the ESW area includes the Rivers Chelmer, Blackwater, Stour and Roman River which support pumped storage reservoirs at Hanningfield and Abberton and treatment works at Langford, Langham, Hanningfield and Layer. The remaining water sourced from inside the Essex resource zone (approximately 3% of total water supplied in the zone) is derived from groundwater via Chalk Well and

additional sources in the south and south west of the zone at Linford, Stifford, Dagenham and Roding, each with on-site treatment.

- 5.25 Water transferred into the Essex supply area from outside the area come from two main sources, the Chigwell raw water supply from Thames Water Utilities and the Ely Ouse to Essex Transfer Scheme (EOETS). In a dry year, up to a third of the water supplied in Essex is derived from the Ely Ouse to Essex Transfer Scheme, which transfers water from Denver in Norfolk via pipelines and pumping stations to the headwaters of the River Stour and River Pant / Blackwater. The EOETS is owned and operated by the Environment Agency (EA).
- 5.26 Another significant water resource in Essex has been the granting of a permanent discharge consent for the Langford Recycling scheme. It has the capacity to increase the water availability for Essex by 8%. This scheme involves the indirect recycling of effluent from the Chelmsford sewage treatment works for re-use as a potable resource. The Langford recycling plant has the capacity for tertiary treatment of up to 40M/d of effluent.
- 5.27 ESW published its Final Water Resources Management Plan (fWRMP) in October 2014 in which it confirmed that the Company forecasts a surplus of supply to demand in all Water Resource Zones (Essex and Suffolk) over the 25-year planning horizon. Essex & Suffolk Water has invested £150million to complete The Abberton Scheme, which has secured supplies of water to one and a half million people in Essex for many years into the future. The scheme, which includes the enlargement and enhancement of Abberton Reservoir, not only provides a vital new water resource but has also transformed the site into a natural wetland.
- 5.28 The Affinity Water Final Water Resources Management Plan (June 2014) also expresses confidence in supplying and managing water resources over a 25-year time horizon, but the 2014 Plan is substantially different from previous plans as there is no longer have a surplus of resources and it means that the company will have to replace lost resources by managing the demand for water or developing new resources and bringing in new supplies.

Wastewater Treatment and Sewerage

- 5.29 The Borough of Brentwood is served by two wastewater treatment and sewerage companies – Anglian Water (AW) and Thames Water (TW) with the boundary of these areas dissecting Brentwood's Urban Area. Sewerage refers to the infrastructure that conveys sewage i.e. sewers, pumping stations to wastewater treatment works. Anglian Water deals with just over half of the Borough's area to north and east including Shenfield and Hutton and Thames Water to the south and west including Warley.
- 5.30 Anglian Water is responsible for water and water recycling services to more than six million customers in the east of England. The business looks after over 38,000 KM of

water mains, 76,000KM of sewers, 140 water treatment works and 1,123 water recycling centres. Its main corporate plan covers the period 2015-2020⁵, and highlights a number of key priorities:

- Fair profits – a financially responsible, efficient business earning fair profits;
- Investing for tomorrow – Provide the service customers expect over the long-term through responsible stewardship;
- Caring for communities – working responsibly with communities;
- A smaller footprint – leading by example on reducing emissions and conserving the world’s natural resources;
- Flourishing environment – a flourishing environment for nature and everyone;
- Satisfied customers – ensuring customer satisfaction;
- Fair charges – bills balance fairness, affordability and value for money;
- Safe clean water – drinking water is safe, clean and acceptable;
- Resilient services – services can cope with disruptive events, and
- Supply meets demand – manage and meet the growth in demand for sustainable and reliable water and water recycling services.

5.31 The Anglian Water Annual Integrated Report 2016 ⁶, provides more specific information on infrastructure planning including a focus upon:

- Improving the resilience of the Ruthamford (Rutland – Grafham – Pitsford) supply system in the west of their operational region to improve resilience against drought;
- Investing in groundwater assets to maintain output and performance, and
- Prioritising Water Recycling Centres for investment, taking a phased approach based upon expected population growth.

5.32 Anglian Water has a statutory responsibility to provide water and water recycling services to new homes and businesses. The company has witnessed an increase in the number of developers requesting planning advice using a voluntary pre-planning capacity service, which can assist with promoting better quality planning applications and setting out how developments can connect to the Anglian Water network without increasing the risk of sewer flooding, pollution and low water pressure. Where necessary, Anglian Water can request appropriate planning conditions for surface and foul water drainage to ensure connections do not result in increased flooding or pollution. Anglian water also own a considerable amount of land – much of which is of value to wildlife and can play a positive role in Green Infrastructure planning.

5.33 The Anglian Water, Water Resources Management Plan (WRMP) 2015 reports on long term planning relating to the development of water resources over a period of 25 years and identifies investment in water resources schemes to meet additional

⁵ Anglian Water – Our Plan for 2015-2020

⁶ Anglian Water Services Limited – Engaging with Customers – Annual Integrated Report 2016

demand related to population growth and changes in per capita consumption of water. The plan for maintaining the supply-demand balance combines an extension of the Ardleigh trading agreement (continuation of the current 70/30 agreement with Affinity Water to trade the resources of the Ardleigh Reservoir) with additional leakage control and water efficiency savings.

- 5.34 Thames Water is the UK's largest water and wastewater services provider with 15 million customers. In terms of sewerage infrastructure, the company has 350 sewage works, treating more than 4.4bn litres per day of wastewater; 67,000 miles of sewer, 2530 pumping stations and 1.2 million manholes. Thames Water also runs two sludge-powered generators and 19 combined heat and power plants generating.
- 5.35 The Thames Water five-year plan 2015-20 provides a number of key priorities, including:
- Providing a better customer service;
 - Helping customers pay bills;
 - Improving the sewage system so that no one should suffer the threat of sewage flooding their home;
 - Introducing major flood relief work in West London;
 - Ensuring that sewage works and pumping stations cope with the demands of a growing population.
 - Generating 33% of own power needs from renewable sources, and
 - The development of the Tideway Tunnel to upgrade London's sewage infrastructure and improve the water quality of the River Thames.
- 5.36 The Thames Water long-term strategy 2015-2040 includes a focus upon wastewater collection, key elements of the strategy in addition to the Thames Tideway Tunnel include:
- Reducing the input of rainfall to sewers - in some areas, sewers operate as a combined system, with rainwater and foul sewage carried in the same network. High volumes of rainfall can therefore fill the system to capacity, causing untreated sewage to overflow, potentially leading to flooded properties and polluted watercourses.
 - Tackling problems caused by heavy rainfall, pumping station failures and structural problems caused by tree roots.
 - Minimising the improper disposal of unsuitable non-flushable items.
 - Working with local authorities and the Environment Agency on promoting and installing Sustainable Drainage Systems.
 - Installation of real time-controlled monitoring systems.

- Targeted maintenance programmes to reduce costs on the long term.
- Up to the year 2020 address remedial action at nine pollution hotspots identified by the Environment Agency and also target 200 polluted surface water outfalls, again identified by the Environment Agency, where sewage enters a watercourse through pipework that is meant only to carry surface water.
- Large parts of the sewerage network can be affected by high groundwater levels and infiltration following prolonged rainfall - 15 locations have been identified covering 65 sub-catchments where three is an intention to make improvements by 2020
- Continue to work with the Environment Agency to identify situations where foul drainage has been wrongly connected to pipes intended to take only surface water run-off. These misconnections cause pollution of rivers, lakes and streams.

INFRASTRUCTURE AND PROJECTS

Flood Risk Mitigation

5.37 A number of surface water flood risk alleviation projects were identified in the ECC Surface Water Management Plan (SWMP)⁷. Some of these projects have been included on a rolling programme of major schemes and are detailed below in Figure 5.7.

Figure 5.7: Surface Water Flood Risk Projects

Project	Prioritisation	Cost Profile (Estimates)	Status
SUDS and Water Management - HORN-B and HORN-C- Horndon Industrial Park	1	£1,581,814	2017/18 delivery
Area BRENT-B - Pilgrims Hatch	2	£108,000	Pipeline Project
Area BRENT-D - Area surrounding Brentwood Station	3	To be confirmed	2018/19 delivery
Area BRENT-F - Thrift Green, Brentwood	4	£91,000	Pipeline Project
Area INGATE-C - Heybridge, Ingatestone	5	£270,000	Pipeline Project
Area BRENT-C - Brook Street, Brentwood	6	£126,000	Pipeline Project
Area INGATE-A - Ingatestone High Street	7	£209,000	Pipeline Project

⁷ This information was last reviewed in 2017 and will require an update on project progress.

Area BRENT-A - Shenfield / Hutton	8	To be confirmed	Pipeline Project
Area BRENT-H - Hutton	8	To be confirmed	Pipeline Project

Watercourse Enhancement⁸

5.38 According to the Anglian River Basin District Management Plan (2015), the priority river basin management issues to tackle in the Combined Essex catchment are physical modifications, point source and diffuse pollution leading to elevated phosphate levels and changes to the natural flow and levels of water. Future aims for the Combined Essex catchment (River Wid) partnership area include:

Measures with £100,000 per year

- Securing existing staff time to manage the partnership and support initiatives underway and develop additional phases of completed projects;
- Engaging with landowners and support restoration projects on riparian local wildlife sites, and
- Create a network of rural sustainable urban drainage systems.

Ideas for additional measures with £1,000,000 per year (as above plus the following):

- Identify 2-3 major riparian habitat management projects to address ecological status, improve flood alleviation capacity and contribute to Biodiversity 2020 targets, and
- Development of a catchment wide project to deal with invasive non-native species.

5.39 At a more specific project-based level there are a number of projects identified as having potential to improve the River Mardyke, which include improving drainage and sewerage infrastructure; habitat and fenland creation; removal of invasive species; and public access improvements.⁹

5.40 Thames21 is the partnership group host for the Roding, Beam and Ingrebourne catchments as detailed in the Thames River Basin Management Plan (December 2015).¹⁰ The priority issues in the catchment are pollution and poor water quality from urban and agricultural run-off and physical modifications for urbanisation and flood protection. Contributions to environmental outcomes by 2021 include reducing

⁸ Information on Watercourse Priorities and Projects may need to be reviewed and updated where necessary.

⁹ Information obtained from: <http://www.essexrivershub.org.uk/index.php/project-lists/river-mardyke-projects>.

¹⁰ Environment Agency / Department for Environment, Food and Rural Affairs – Part 1: Thames river basin district – River basin management plan Updated: December 2015.

phosphates, ammonia, heavy metals and silt from urban run-off entering the Ingrebourne Marshes SSSI. Future aims include:

Additional Measures with £100,000 per year

- Connecting Communities; encouraging communities to take ownership of water quality in their area. Practical conservation days, training events, misconnection awareness and littering prevention campaigns, water quality monitoring and an Ingrebourne Valley mobile app.
- Development and implementation of a water body wide invasive species identification, monitoring and eradication programme. Surveying for invasive non-native species (INNS) such as mink, Himalayan balsam, floating pennywort and Japanese knotweed.
- Promote and encourage the use of sustainable drainage systems (SuDS) in new developments and retrofitting to existing sites within the catchment to reduce the impacts of urban diffuse pollution and phosphate run-off from fertilisers and herbicides

Ideas for additional measures with £1,000,000 per year (as above plus):

- Implementation of the Havering Wildlife Project Ingrebourne Restoration Plan. Flood management using natural processes, climate change adaptation, reconnecting people to the environment, improved recreation access and enhanced habitats. This project will improve the status of fish, macrophytes and invertebrates and improve amenity and recreational value.
- Modelling and design proposals for the Harrow Lodge Park Restoration Plan on the Ravensbourne. Ultimately, this will improve the status of fish, invertebrate and macrophyte populations and amenity and recreational value.
- Development and implementation of a water body wide culvert awareness and removal programme. Promoting alternatives to culverting, influencing planning policy and encouraging sustainable development without culverts. This will resolve failures in fish and invertebrates, increase recreational opportunities and contribute to biodiversity.

5.41 The Essex Rivers Hub is a partnership initiative led by Essex Wildlife Trust, Essex Biodiversity Project and the Environment Agency. A number of potential projects have been identified earlier in this report and are publically accessible via the Hub's website, but are subject to securing appropriate levels of funding. A range of local partnership

priorities / projects have also been identified by the catchment partnership for the Roding, Beam and Ingrebourne as detailed in the Thames River Basin Management Plan, and earlier in this report. These projects will be subject to securing appropriate levels of funding. **Epping Forest Pilot**

Potable Water

5.42 There are no planned major infrastructure upgrades scheduled for potable water supply infrastructure within the Brentwood Borough.

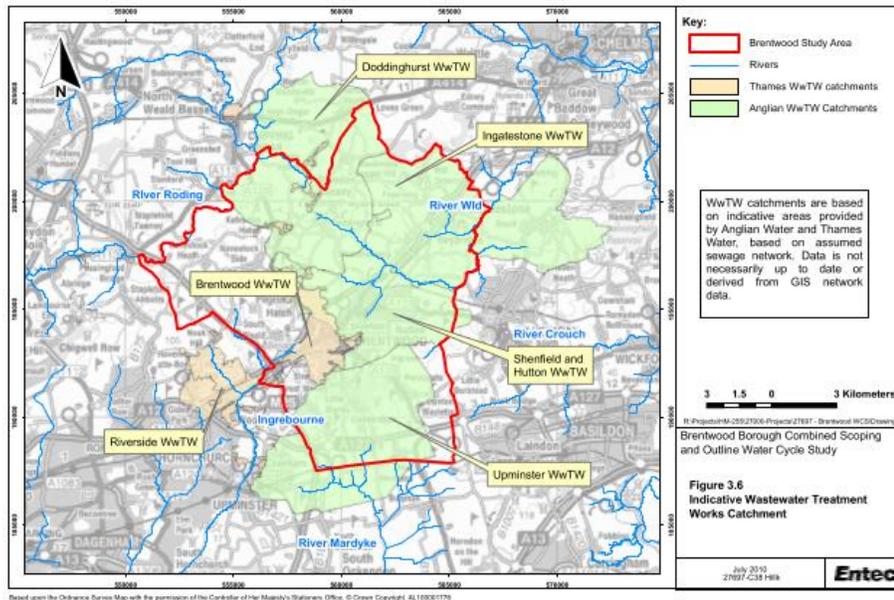
Wastewater Treatment Works

5.43 There are six Wastewater Treatment Works (WwTW) serving Brentwood Borough:

- Doddinghurst WwTW (Anglian Water)
- Ingatestone WwTW (Anglian Water)
- Shenfield and Hutton WwTW (Anglian Water)
- Brentwood WwTW (Thames Water)
- Upminster WwTW (Anglian Water)
- Riverside WwTW (serves a small area near Brook Street Interchange) (Thames Water).

A plan setting out the indicative WwTW catchment areas is detailed in Figure 5.7 below.¹¹

Figure 5.7: Wastewater Treatment Works Catchments



¹¹ Image reproduced from Brentwood Scoping and Outline Water Cycle Study – Final Report January 2011

5.44 The updated WCS has usefully provided a summary of Local Plan draft housing development sites (at the time of analysis) linked to WwTWs and is reproduced below in Figure 5.8¹².

Figure 5.8: Clustering of sites by WwTW

WwTW	Housing Allocation Site	Option 2 Dwellings (Net)	Option 6 Dwellings (Net)
Doddinghurst WwTW	Land South of Redrose Lane	40	40
	Chestnut Field, Blackmore Road	10	10
	Land adj Tipps Cross Community Hall, Blackmore Road	10	10
	Land South of Redrose Lane	56	56
	Swedish Field, Stock Lane	30	30
	Brizes Corner Field, Blackmore Road, Kelvedon Hatch	23	23
Shenfield & Hutton WwTW	Eagle and Child Pub, Shenfield	20	20
	Land at Crescent Drive, Shenfield	55	55

WwTW	Housing Allocation Site	Option 2 Dwellings (Net)	Option 6 Dwellings (Net)
	Wates Way Industrial Estate*	40	40
	Essex County Fire Brigade HQ	132	132
	Sow and Grow, Ongar Road, Pilgrims Hatch*	19	19
	Land at Priests Lane	95	95
	Land off Doddinghurst Road*	100	100
	Land east of Chelmsford Rd, Shenfield	215	215
	Land north of A1023 Chelmsford Road, Shenfield	100	100
	Officer's Meadow	510	510
	Land at Bisleigh Grange, Shenfield	22	0
	Land south east of Hall Wood, Shenfield	23	0
	Land rear of St Thomas of Canterbury School	109	0
	Land west of Hall Ln	116	0
	Land to the west of Hall Wood	128	0
	Land north west of Shenfield	489	0
	Land east of Hall Ln	354	0
Sawyers Hall Fm	450	0	
Land between A12 and Hall Ln	995	0	
Ingatstone WwTW	Ingatstone Garden Centre	120	120
	Land adjacent to Ingatstone By-pass	57	57
	Former A12 Work Site	41	41
Upminster WwTW	Council Depot, Warley	123	123
	Ford Headquarters, Warley	350	350
	West Horndon Industrial Estate	580**	580**
	Dunton Hills Garden Village (plan period)	0	4000
Brentwood WwTW	Land at Hunter House, Western Road	48	48
	Chatham Way / Crown Street Car Park	31	31
	Westbury Road Car Park	45	45
	Wates Way Industrial Estate*	40	40
	Brentwood railway station car park	100	100
	William Hunter Way	300	300
	Sow and Grow, Ongar Road, Pilgrims Hatch*	19	19
	Land adj to Carmel, Mascalls Ln	9	9
	Land west of Warley Hill	40	40
	Land East of Nags Head Lane, Brentwood	125	125
	Land at Honeypot Lane	200	200
Land off Doddinghurst Road*	100	100	

¹² Please note that there is a slight variation in the sites and numbers assessed to final allocation sites in the Local Plan.

IMPLICATIONS OF GROWTH

Flooding

5.45 The main implications of the Local Plan allocation sites in relation to flooding are summarised within Figure 5.9 below. It can be noted from the table, that key conclusions include:

- site specific flood risk assessment and site layout and design around flood risk for both Officer's Meadow and Dunton Hills Garden Village.
- site specific flood risk assessments for approximately an additional 33 sites;
- drainage impact assessments for the remaining 12 proposed allocations.

There will also be a need to refer to the site-specific recommendations with the Essex SWMP

5.46 At a more general level, the SFRA update includes a series of recommendations which are summarised below and are likely to have cost implications as part of the development process for various sites:

- sites around non-modelled main river and ordinary watercourses should use the surface water flood risk maps as a proxy for fluvial flood risks, with hydraulic assessments required of the likely flood risks from currently non-modelled main river and ordinary watercourses;
- design in fluvial floodplains on sites, and
- all new development should attempt to reduce surface water run-off by sustainably managing run-off on site.

5.47 The Strategic Flood Risk Assessment identifies one location in the Brentwood Borough where there is a risk of flooding caused by sewer blockage/capacity issue. The assessment refers to a possible flood event at Ingatestone High Street, at a low point, due to sewer flooding at Whadden Chase. The potential flooding would occur for a 1 in 100 year annual probability event. This area drains into the Ingatestone WwTW and as such represents a potential constraint to housing growth with regard to sewerage network capacity.

Figure 5.9: Summary of Flooding Issues – Local Plan Sites

Site	Site Name	Proposed Use	Total Site Area (ha)	Fluvial Flood Zone						Surface water risk			In Critical Drainage Area?	Development Viability	
				Flood Zone 1		Flood Zone 2		Flood Zone 3		High Risk	Medium Risk	Low Risk			
				Area	% of site	Area	% of site	Area	% of site						
112A	Childerditch Industrial Estate	Employment Site	11.25	100.00	100.00	0.00	0.00	0.00	0.00	0.00	Yes	Yes	Yes	No	site specific FRA required
102	William Hunter Way car park, Brentwood	Mixed Use	1.2	100.00	100.00	0.00	0.00	0.00	0.00	0.00	No	Yes	Yes	No	site specific FRA required
087	Land at Alexander Lane, Shenfield	Housing Site	1.73	100.00	100.00	0.00	0.00	0.00	0.00	0.00	No	No	Yes	Yes	site specific FRA required - within CDA so should refer to the site specific recommendations in the SWMP
003	Wates Way Industrial Estate, Ongar Road, Brentwood	Mixed Use	0.99	100.00	100.00	0.00	0.00	0.00	0.00	0.00	Yes	Yes	Yes	No	permitted subject to LPA/LLFA consultation, requires Drainage Impact Assessment
21	Horndon Industrial Estate, Station Road, West Horndon	Mixed Use	10	100.00	100.00	0.00	0.00	0.00	0.00	0.00	Yes	Yes	Yes	Yes	site specific FRA required - within CDA so should refer to the site specific recommendations in the SWMP
39	Westbury Road Car Park, Westbury Road, Brentwood	Housing Site	0.27	100.00	100.00	0.00	0.00	0.00	0.00	0.00	No	No	No	No	permitted subject to LPA/LLFA consultation, requires Drainage Impact Assessment
40	Chatham Way/Crown Street Car Park, Brentwood	Housing Site	0.33	100.00	100.00	0.00	0.00	0.00	0.00	0.00	No	No	No	No	permitted subject to LPA/LLFA consultation, requires Drainage Impact Assessment
41	Land at Hunter House, Western Road, Brentwood	Housing Site	0.21	100.00	100.00	0.00	0.00	0.00	0.00	0.00	No	No	No	No	permitted subject to LPA/LLFA consultation, requires Drainage Impact Assessment
81	Council Depot, The Drive, Warley	Housing Site	3.2	100.00	100.00	0.00	0.00	0.00	0.00	0.00	Yes	Yes	Yes	No	site specific FRA required
83	Land west of Warley Hill, Pastoral Way, Warley	Housing Site	2.21	100.00	100.00	0.00	0.00	0.00	0.00	0.00	No	No	Yes	No	site specific FRA required
085B	Land adjacent to Tipps Cross Community Hall, Blackmore Road, Tipps Cross	Housing Site	0.33	100.00	100.00	0.00	0.00	0.00	0.00	0.00	No	No	No	No	permitted subject to LPA/LLFA consultation, requires Drainage Impact Assessment
2	Brentwood railway station car park	Housing Site	1.07	100.00	100.00	0.00	0.00	0.00	0.00	0.00	Yes	Yes	Yes	Yes	site specific FRA required - within CDA so should refer to the site specific recommendations in the SWMP
10	Sow & Grow Nursery, Ongar Road, Pilgrims Hatch	Housing Site	1.2	100.00	100.00	0.00	0.00	0.00	0.00	0.00	Yes	Yes	Yes	No	site specific FRA required
079A	Land adjacent to Ingatestone by-pass (part bounded by Roman Road, south of flyover)	Housing Site	1.39	100.00	100.00	0.00	0.00	0.00	0.00	0.00	No	Yes	Yes	Yes	site specific FRA required - within CDA so should refer to the site specific recommendations in the SWMP
77	Land south of Bedrose Lane, north of Woollard Way, Blackmore	Housing Site	3.3	100.00	100.00	0.00	0.00	0.00	0.00	0.00	No	No	Yes	No	site specific FRA required
76	Land south of Bedrose Lane, north of Orchard Piece, Blackmore	Housing Site	1.69	100.00	100.00	0.00	0.00	0.00	0.00	0.00	Yes	Yes	Yes	No	site specific FRA required
20	West Horndon Industrial Estate, Childerditch Lane, West Horndon	Mixed Use	6.45	100.00	100.00	0.00	0.00	0.00	0.00	0.00	Yes	Yes	Yes	Yes	site specific FRA required - within CDA so should refer to the site specific recommendations in the SWMP
22	Land at Honey Pot Lane, Brentwood	Housing Site	10.93	100.00	100.00	0.00	0.00	0.00	0.00	0.00	Yes	Yes	Yes	No	site specific FRA required
023A	Land off Dodinghurst Road, either side of A12, Brentwood	Housing Site	5.99	100.00	100.00	0.00	0.00	0.00	0.00	0.00	Yes	Yes	Yes	No	site specific FRA required
32	Land east of Nags Head Lane, Brentwood	Housing Site	5.88	100.00	100.00	0.00	0.00	0.00	0.00	0.00	No	Yes	Yes	No	site specific FRA required
34	Officer's Meadow, land off Alexander Lane, Shenfield	Housing Site	20.8	20.34	97.79	0.39	1.88	0.07	0.34	0.34	Yes	Yes	Yes	Yes	consider site layout and design around flood risk - within CDA so should refer to the site specific recommendations in the SWMP
44	Land at Priests Lane (west), Brentwood	Housing Site	4.51	100.00	100.00	0.00	0.00	0.00	0.00	0.00	No	Yes	Yes	Yes	site specific FRA required - within CDA so should refer to the site specific recommendations in the SWMP
27	Land adjacent to Carmel, Mascalls Lane, Warley	Housing Site	0.34	100.00	100.00	0.00	0.00	0.00	0.00	0.00	No	No	No	No	permitted subject to LPA/LLFA consultation, requires Drainage Impact Assessment
079C	Land adjacent to Ingatestone by-pass (part bounded by Roman Road)	Employment Site	2.06	100.00	100.00	0.00	0.00	0.00	0.00	0.00	No	Yes	Yes	Yes	site specific FRA required - within CDA so should refer to the site specific recommendations in the SWMP
128	Ingatestone Garden Centre, Roman Road, Ingatestone	Housing Site	3.45	100.00	100.00	0.00	0.00	0.00	0.00	0.00	No	Yes	Yes	No	site specific FRA required
152	Land East of Horndon Industrial Estate	Mixed Use	0.8	100.00	100.00	0.00	0.00	0.00	0.00	0.00	No	Yes	Yes	No	permitted subject to LPA/LLFA consultation, requires Drainage Impact Assessment
158	Land North of A1023 Chelmsford Road, Shenfield	Mixed Use	4.45	100.00	100.00	0.00	0.00	0.00	0.00	0.00	No	Yes	Yes	Yes	site specific FRA required - within CDA so should refer to the site specific recommendations in the SWMP
178	Land at Priests Lane (east) adjacent Bishops Walk, Brentwood	Housing Site	0.61	100.00	100.00	0.00	0.00	0.00	0.00	0.00	No	No	Yes	Yes	permitted subject to LPA/LLFA consultation, requires Drainage Impact Assessment
186	Land at Crescent Drive, Brentwood	Housing Site	1.54	100.00	100.00	0.00	0.00	0.00	0.00	0.00	No	Yes	Yes	Yes	site specific FRA required - within CDA so should refer to the site specific recommendations in the SWMP
187	Land south of East Horndon Hall	Employment Site	8.7	100.00	100.00	0.00	0.00	0.00	0.00	0.00	Yes	Yes	Yes	No	site specific FRA required
112D	Childerditch Industrial Estate	Employment Site	2.34	100.00	100.00	0.00	0.00	0.00	0.00	0.00	Yes	Yes	Yes	No	site specific FRA required

194	Brizes Corner Field, Blackmore Road, Kelvedon Hatch	Housing Site	0.87	100.00	100.00	0.00	0.00	0.00	0.00	No	No	Yes	No	permitted subject to LPA/LLFA consultation, requires Drainage Impact Assessment
106	Site adjacent to Ingestone Garden Centre (former A12 works site)	Housing Site	4.65	100.00	100.00	0.00	0.00	0.00	0.00	No	Yes	Yes	No	site specific FRA required
235	Land to the north of Alexander Lane, Shenfield	Housing Site	1.36	100.00	100.00	0.00	0.00	0.00	0.00	No	Yes	Yes	Yes	site specific FRA required - within CDA so should refer to the site specific recommendations in the SWMP
263	Land east of Chelmsford Road, Shenfield	Housing Site	9.85	100.00	100.00	0.00	0.00	0.00	0.00	No	Yes	Yes	Yes	site specific FRA required - within CDA so should refer to the site specific recommendations in the SWMP
276	Oak Hurst, Chelmsford Road, Shenfield	Housing Site	0.55	100.00	100.00	0.00	0.00	0.00	0.00	No	No	No	No	permitted subject to LPA/LLFA consultation, requires Drainage Impact Assessment
294	Chestnut Field, Backmore Road, Hook End	Housing Site	0.33	100.00	100.00	0.00	0.00	0.00	0.00	No	No	No	No	permitted subject to LPA/LLFA consultation, requires Drainage Impact Assessment
311	The Eagle and Child Public House, Chelmsford Road, Shenfield	Housing Site	0.24	100.00	100.00	0.00	0.00	0.00	0.00	No	Yes	Yes	Yes	permitted subject to LPA/LLFA consultation, requires Drainage Impact Assessment
117B	Ford Warley - Northern Site	Housing Site	1.28	100.00	100.00	0.00	0.00	0.00	0.00	No	No	Yes	No	site specific FRA required
117A	Ford Warley - Southern Site	Housing Site	6.81	100.00	100.00	0.00	0.00	0.00	0.00	Yes	Yes	Yes	No	site specific FRA required
075B	Land off Stocks Lane, Kelvedon Hatch	Housing Site	2.15	100.00	100.00	0.00	0.00	0.00	0.00	No	No	Yes	No	site specific FRA required
112E	Childerditch Industrial Estate	Employment site	7.05	100.00	100.00	0.00	0.00	0.00	0.00	Yes	Yes	Yes	No	site specific FRA required
101A	Brentwood Enterprise Park (M25 Works Site at A127/M25 junction 29)	Employment site	35.47	100.00	100.00	0.00	0.00	0.00	0.00	Yes	Yes	Yes	No	site specific FRA required
023B	Land off Doddinghurst Road, either side of A12, Brentwood	Housing Site	2.2	100.00	100.00	0.00	0.00	0.00	0.00	Yes	Yes	Yes	No	site specific FRA required
101C	Codham Hall Farm	Employment	9.62	100.00	100.00	0.00	0.00	0.00	0.00	Yes	Yes	Yes	No	site specific FRA required
101D	Codham Hall Farm	Landscaping Area	8.01	100.00	100.00	0.00	0.00	0.00	0.00	Yes	Yes	Yes	No	site specific FRA required
200	Dunton Hills Garden Village	Mixed Use	257	231.28	89.99	2.35	0.91	23.37	0.00	Yes	Yes	Yes	No	site specific FRA required, consider site layout and design around flood risk

Wastewater Treatment and Water Quality¹³

- 5.48 The assessment of DWFs undertaken in the WCS update indicate that Doddinghurst WwTW, Shenfield & Hutton WwTW and Upminster WwTW are not predicted to discharge a volume of effluent greater than the consented limit for any epoch, under any tested scenario.
- 5.49 The assessment also indicates that Brentwood WwTW is already discharging a volume of effluent greater than its consented limit. Additionally, the review indicated that Ingatestone WwTW has less than 10% capacity left. By 2020 it is predicted that both Ingatestone and Brentwood WwTWs will be discharging at a greater volume than the current consent limit.
- 5.50 The assessments of impacts on water quality and the WwTW show future housing growth will not cause any significant deterioration in water quality and that WwTWs and their associated sewer networks are not likely to need upgrading by 2036. However, it has been identified that there may need to be some consideration to sewerage network upgrade evidenced by modelled flooding of Ingatestone High Street during a 1 in 100 year annual event due to capacity of sewer network in the area.
- 5.51 Consent limits may need to be revised for Brentwood and Ingatestone WwTWs as DWF has been predicted to exceed the current consent limits. This applies to both single house occupancy of 5 people and single house occupancy of 2.5 people. Permit levels may also need to be revised for ammonia at Doddinghurst WwTW, to prevent WFD class deterioration.

Water Supply¹⁴

- 5.52 Affinity Water - It is clear from the forecast supply-demand balance and the main Water Resources Management Plan (WRMP14) that the resource situation in this area is constrained by environmental water availability, and that with growth forecast, if there were no interventions security of supply would be at risk. The WRMP14 forecast takes into account that over 33,020 new properties will be built in WRZ5 by the end of the planning period in 2040. There are 169 homes scheduled in the Affinity Water WRZ5. Due to the low volume of development in the WRZ5 growth plans set out by Brentwood Borough Council certainly have the potential to be accommodated within the overall Affinity Water WRZ5 WRMP, however, further confirmation from Affinity Water will be required to firstly assess demands developments occurring outside of the Brentwood area and to ensure that the individual developments proposed have been fully incorporated into each WRMP.

¹³ Information extracted and summarised in part from WCS Update – further technical information is available within the main publication.

¹⁴ Information extracted and summarised in part from WCS Update – further technical information is available within the main publication.

- 5.53 Essex and Suffolk Water projections have shown a supply between the 2014 WRMP and 2040 under current forecasts. The forecast takes account that 136,504 properties will be built by 2030 and the household population is expected to expand from 1.628 million to 1.866 million people. There are up to 9686 homes forecast in the Essex WRZ under growth plans (including windfall) set out by Brentwood Borough Council. Given that the forecast takes into account almost 15 times that figure, and the water resource zones is surplus it appears that Essex and Suffolk Water have sufficient capacity to meet the demands of future developments.

FINANCIAL CONSIDERATIONS

- 5.54 The financial considerations arising from this chapter are detailed in Part B of IDP.

06 WASTE



OVERVIEW

6.1 What we do with our waste and how we manage the environment and finite resources in a sustainable manner are nationally high-profile topics, particularly with recent media coverage on plastic waste, both within the UK and overseas.¹ The environmental charity WRAP focuses upon the need for a whole lifecycle approach to resources, with priorities to:

- re-invent the way we design, produce and sell products;
- re-think how we use and consume products
- re-define what is possible through re-use and recycling.

In terms of waste resource management, WRAP analysis indicates clear opportunities for growth in the recycling sector and jobs through taking a smarter approach to how we manage finite resources, minimise waste and return more material to the UK economy through recycling.²

6.2 It is generally down to individual councils as to how they collect and manage waste, but there is both domestic and European legislation and government policy which has helped to drive recycling rates. Key drivers include the Landfill Allowance Trading Scheme, a mechanism designed to help meet landfill diversion targets under the EU Landfill Directive. Under this scheme, councils are given a decreasing number of allowances for sending waste to landfill each year which they can trade. This provides an incentive for councils to invest in recycling facilities. Recycling data is uploaded by

¹ <https://www.bbc.co.uk/news/science-environment-42264788>. The legal definition of waste in the UK is derived from the EU Waste Framework Directive (Directive 2008/98/EC). The Directive states that 'waste' is:- "Any substance or object which the holder discards or intends or is required to discard. Information from p.7 para 1.4 Essex County Council & Southend-on-Sea Borough Council 'Essex and Southend-on-Sea Waste Local Plan' Adopted July 2017.

² WRAP – Resource Revolution: Creating the Future – WRAP's plan 2015-2020

councils quarterly to the government's online WasteDataFlow database and league tables are produced at the end of each financial year.

6.3 Landfill Tax is also an increasingly important driver. First introduced in 1996, this tax is applied to every tonne of waste sent to landfill. It currently stands at £48 a tonne for 'active' waste and £2.50 a tonne for 'inactive' waste³.

6.4 The Waste Local Plan, sets out policy considerations which are relevant to the Brentwood Local Plan, including:

- Policy 4 – Areas of Search – Areas where in principle the Waste Planning Authorities may support waste management development outside of allocated sites – these include Childerditch Industrial Estate and West Horndon Industrial Estate.

No new strategic site allocations for waste are detailed within the waste plan for the Brentwood Borough area.

6.5 The annual percentage recycling rates for household waste within Brentwood Borough that is reused, recycled and composted are available below in Figure 6.1. According to WasteDataFlow for the period covering the financial year 2015/16, Brentwood Borough Council was rated 130th out of 351 local authorities for household waste recycling. Local Authorities towards the top of the table are achieving recycling rates of circa 66% and towards the bottom circa 15%.⁴ Brentwood is committed to working towards a recycling rate of 60% by 2020. It is estimated that the average household in the UK produces more than a tonne of waste every year and that the average cost per tonne of waste disposal is about £92.30.⁵

³ Information in paragraphs 7.2 & 7.3 reproduced from www.letsrecycle.com

⁴ <https://www.letsrecycle.com/councils/league-tables/201516-overall-performance/>

⁵ Letsrecycle baseline information – based upon January 2017 estimates for Energy from Waste, Landfill plus tax and Refuse Derived Fuel – calculation excludes landfill with no tax which was estimated at between £15-25 per tonne.

Figure 6.1: Household Waste Recycling

Period For	Annual %
2015-2016	45.9
2014-2015	47.69
2013-2014	43.5
2012-2013	43.2
2011-2012	43
2010-2011	41
2009-2010	40
2008-2009	38
2007-2008	35
2006-2007	31
2005-2006	27

EXISTING INFRASTRUCTURE, GAPS AND PROGRAMMES

Existing Infrastructure – Recycling Centres

- 6.6 Within the Borough, Essex County Council is responsible for the operation of the two Recycling Centres for Household Waste (RCHW) in the Brentwood Borough, these centres are located at Coxtie Green, Brentwood and Roman Road, Mountnessing. The Mountnessing RCHW will not accept domestic and construction waste, while the Brentwood RCHW will accept all waste materials to allow for domestic disposals but not trade waste.
- 6.7 The Borough Council runs a recycling site at the Works Depot, The Drive, Warley. This site provides facilities for recycling paper, cardboard, plastics, cans and paper based liquid food and drinks cartons. Textiles, glass and small electrical items can also be taken to the recycling site. The Borough also has recycling modules that accept paper, cardboard, cans and plastics at Brentwood and Shenfield High Streets and a recycling bin for newspapers at Brentwood Station.
- 6.8 Kerbside waste and recycling collection in Brentwood Borough includes:
- household, and garden food waste;
 - glass, paper, cardboard, plastics, cans and textiles, and
 - larger household items – pre-booked paid service.

Existing Infrastructure: Waste Transfer Stations – Commercial

- 6.9 Waste transfer stations are designed to aid the sorting and storing of materials before they can be moved on to larger sites for disposal or treatment. Licensed waste collection vehicles generally deposit material at waste transfer stations so that following sorting it can be transported through larger bulk haulage vehicles better suited to transport waste over long distances. The change in vehicle reduces the amount of mileage used by smaller collection vehicles to transport the waste, which in turn helps reduce traffic in local communities.⁶
- 6.10 The Borough currently has a range of licensed trade orientated waste transfer stations⁷ (WTS) some of the WTS are licenced to provide specialist services. Information on environmental licences is available through the Environment Agency Public Registers database. WTS information is detailed below in Figure 6.2.

Figure 6.2: Licenced Waste Transfer Stations

Licensed Holder	Permit Number / Waste Management Licenced Number	Location	Site Type	Additional Info
Range of services				
Heatherland Ltd trading as Landon Plant and Waste Services	Permit number - BP3397NP/V002 / waste management licence number – 80429	Unit 5 & 6, Hallsford Bridge Industrial Estate, Stondon Road, Ongar, Essex, CM5 9RB	A11 : Household, Commercial & Industrial Waste Transfer Station	Licensed by the Environment Agency for all types of solid non-hazardous commercial, domestic, industrial, biodegradable and inert wastes. It is licensed for up to 230,000 tonnes of waste per annum
G. J Bowmer (Waste Disposal) Limited	Permit number - SP3294NT/A001 / waste management licence number – 71310	Fairview, Magpie Lane, Brentwood, Essex, CM13 3DT	A9 : Special Waste Transfer Station	
Philip W Keen Ltd	Permit number BP3997NC/V005 / waste management	9 Hallsford Bridge Ind Estate, Stondon Road, Stondon Massey, Ongar, Essex, CM5 9RB	A14 : Transfer Station taking Non-Biodegradable Wastes	

⁶ Information reproduced from <https://www.biffa.co.uk/household-waste/information-for-councils/our-services/transfer-stations/> - accessed 16th March 2017.

⁷ Information obtained from the Environment Agency Public Registers - <https://environment.data.gov.uk/public-register/waste-operations/registration/BB3708XG-A001?pageState=result-waste-operations>

	licence number - 80431			
Windsor Waste Management Ltd	Permit number - EB3605TJ/A001 / waste management licence no. 403657	Unit 29 Childerditch Industrial Estate, Childerditch Hall Drive, Little Warley, Brentwood, Essex CM13 3HD	S0809 No 9: Asbestos Waste Transfer Station	Provides a complete recycling and waste management service with container and transportation options for on-site and off-site segregation of business waste
Specialist				
S M H Products Limited	Permit number - ZP3799VD/A001/ waste management licence no. 102930	Unit 3 Childerditch Industrial Estate, Childerditch Hall Drive, Nr Brentwood, Essex, CM13 3HD	S0809 No 9: Asbestos Waste Transfer Station	Specialist end to end decontamination services

Existing Infrastructure: Metal Recycling Sites, End of Life Vehicles and Vehicle Depollution Facilities

6.11 There are a number of licenced vehicle trade recycling facilities within the Borough, which are detailed below in Figure 6.3.

Figure 6.3: Licenced Vehicle Trade Recycling Facilities

Licensed Holder	Permit Number / Waste Management Licenced Number	Location	Site Type	Additional Info
Brentwood Auto Spares Ltd	Permit number - AP3598NU/A001/ Waste Management Licence - 71141	Thoby Priory, Thoby Lane, Mountnessing, Brentwood, Essex, CM15 0TB	A19 : Metal Recycling Site (Vehicle Dismantler)	Salvage vehicles and spares.
Jack Ellwood, Frederick C Ellwood, Mark C Ellwood, Jessica E Ellwood / TA Warley Auto Salvage	Permit number - CP3294NW/A001/ Waste Management Licence - 71435	Land / Premises At, Warley Street, Great Warley, Brentwood, Essex, CM13 3LB	A19a : End of Life Vehicle Facility	
German Spare Parts Limited	Permit number - AB3508KZ/T001 / Waste Management Licence - 102446	Unit 1 Claggate, Chivers Road, Brentwood, Essex, CM15 0LH	SR2011 No3: Vehicle Depollution Facility <5000 tps	
Harish Auto Exports Limited	Permit number - BB3708XG/A001 / Waste	Unit 7, Claggate, Chivers Road, Brentwood, Essex, CM15 0LH	SR2011 No3: Vehicle Depollution	

	Management Licence - 401557		Facility <5000 tps	
Europevans Limited	Permit number - BB3304XE/A001 / Waste Management Licence - 401227	Europevans Limited, Thoby Lane, Mountnessing, Brentwood, Essex, CM15 0TB	SR2011 No3: Vehicle Depollution Facility <5000 tps	
R S M Scrap Metal Limited	Permit number - BB3007HQ/A001 / Waste Management Licence - 401043	Four Oaks Yard, Chivers Road, Stondon Massey, Brentwood, CM15 0LH	SR2011 No3: Vehicle Depollution Facility <5000 tps	

6.12 Apart from the licences for the recycling centres, the remaining permits issued by the Environment Agency in the Borough cover a wide range of activities from the use of inert waste to contour golf courses, physical environmental treatments and the treatment of waste to produce soil. Wastewater recycling facilities as discussed in detail in the Water Infrastructure chapter of this report.

Waste Infrastructure – Gaps in Provision and Potential Projects

6.13 Discussions with the Borough Council’s Environmental Health team has indicated potential local gaps in waste and recycling in relation to:

- composting facilities – there is no major specialist facility in the Borough;
- commercial waste recycling – while there are a number of commercial collection services and waste transfer sites, there is potentially a deficit in an easy to access ‘turn up’ or permit access site for businesses depositing small levels of commercial waste - the Borough continues to witness regular fly-tipping and this may help alleviate some of these problems;
- potential lack of innovative thinking in end solutions for waste – recognising the increasing limitations of land fill. Opportunities to explore incineration, and waste to energy thermal and non-thermal technologies at a local level.
- growth and capacity constraints for current RCHW operations.

6.14 There are currently no major plans for investment in waste infrastructure within the Borough.

IMPLICATIONS OF GROWTH

6.15 The uplift in households through the Local Plan allocations is likely to increase pressure on household waste recycling centres or civic amenity sites, where it is noted that user delays can occur at peak times. While there are no plans for major waste projects,

there will be the need to provide potentially additional on-site recycling areas as part of major housing and employment developments.

- 6.16 At a practical level site level, one of the Council's major allocations is the current Warley Depot site. There will be a need to consider an alternative location or approach to delivering major recycling points or services as this site moves forward for re-development. The site is also home to the Council's transport depot.
- 6.17 There are ambitions to increase household recycling rates across the Borough and there may be an opportunity to consider the feasibility of introducing a more integrated or smarter approach to recycling and waste management, particularly on larger scheme projects, including Dunton Hills. The Eddington development in the University of Cambridge's new district has introduced underground bins (about 450) with steel bin chutes which are inset in pavements outside of homes to eliminate the need for about 9000 wheelie bins across the 150 ha / 3000 dwelling site. The system uses a large underground chamber and sensors to notify the waste service when full, with the benefit of only undertaking collections when needed. Similar smaller scale schemes are also in operational across the country.
- 6.18 On the topic of innovation, there are opportunities to tackle the lack of specialist composting facilities in the Borough with developing community composting networks. This could be linked to allotments and other locations including schools and community projects.
- 6.19 There are connections to be made from energy and waste projects which are usually addressed at the Local Waste Plan level including Energy from Waste (EFW) infrastructure.

FINANCIAL IMPLICATIONS

- 6.20 The exact onsite cost of new neighbourhood scale recycling facilities is very much dependent upon the scale and type of facilities. AECOM have estimated that for the provision of on-site recycling areas, this may cost in the region of £200 per residential unit using their cost model for garden towns / villages.⁸
- 6.21 Further business case analysis is required in relation to the Warley Depot site and alternative service provision. The end costs may be significant if re-provision of services is required.

⁸ https://www.aecom.com/without-limits/wp-content/uploads/2018/01/AECOM_180006BP_Masterplanning_0118_CM_FINAL_SP.pdf

6.22 The conventional costs of waste and recycling costs can be requested through s.106 agreements for both containers and vehicle infrastructure. Some calculation suggest that a whole additional vehicle would be required where there is approximately 2,000 residential units. The costs for this type of vehicle are circa £150,000. An indication of conventional container costs is detailed below in Figure 6.4⁹.

Figure 6.4: Waste Container Costs

Containment	Cost*
180 litre wheeled bin 17p per litre	£30
240 litre wheeled bin 19p per litre	£45
660 litre wheeled bin 22p per litre	£145
1100 litre wheeled bin 26p per litre	£286
55 litre black box 15p per litre	£8

6.23 It is recommended that further feasibility work into smart and underground recycling / waste facilities is undertaken in relation to strategic development sites, including Dunton Hills. There is also an opportunity to consider feasibility and start-up financing for community composting pilots.

6.24 Further cost information is detailed in Part B of the IDP.

⁹ Baseline costs and information from - <http://www.wiltshire.gov.uk/wiltshire-council-waste-collection-guidance-for-new-developments.pdf>

07 BROADBAND AND MOBILE TECHNOLOGY

Image To insert

OVERVIEW

7.1 The speed of technological advances can at times seem daunting which makes consideration of infrastructure planning extremely challenging. This chapter tends to focus upon big messages and directions – particularly around broadband / fibre, and mobile telecommunications.

A Snapshot of Change

- 7.2 Each year Deloitte Global produce a set of global technology predictions, which for 2018 focused upon¹:
- Augmented Reality (AR) - the continued expansion of augmented reality linked to apps development and mobile phone technology particularly focused around photorealistic AR and camera features;
 - smartphones – the full potential of smartphones has yet to be fully realised with multiple functionality and artificial intelligence features – smartphones connectivity is also about to undergo a further step change in evolution with the upcoming deployment of 5G services;
 - better understanding of the negative impacts of technology – particularly smartphone on the behaviour and activity of users;
 - machine learning and artificial intelligence – chips are at the heart of much technology - allowing for the use of less power at less cost and faster speeds of data processing with integrated learning;
 - live broadcasting continues to thrive in an online world – video now accounts for 75% of internet traffic;
 - media subscriptions – further growth predicted in number of average number of online subscriptions per individual and household;
 - advertising – reaching customers within a growing culture of ad blocking – particularly within the context of social media;

¹ <http://www.deloitte.co.uk/tmtpredictions/>

- television – continued decline in traditional viewing for 18-24 year olds but the proportion of same age group viewing live and time-shifted television not moving significantly over time;
- supplying services to mobile only customers without access to wired home internet and using restricted broadband speeds if available, and
- in flight connectivity for airlines alongside train / rail based connectivity trends for both surface and underground.

It is obvious from the above snapshot, that technology plays a multi-layered role in how we live, work and play, with access to technology differentiated by age, culture, location and social standing. Getting the right technological infrastructure in place at the right time is fundamental to well-planned and successful communities.

National Planning Policy Framework

7.3 The NPPF is explicit in the support for high quality communications, stating that:

‘Advanced, high quality and reliable communications infrastructure is essential for economic growth and social well-being. Planning policies and decisions should support the expansion of electronic communications networks, including next generation mobile technology (such as 5G) and full fibre broadband connections. Policies should set out how high quality digital infrastructure, providing access to services from a range of providers, is expected to be delivered and upgraded over time; and should prioritise full fibre connections to existing and new developments (as these connections will, in almost all cases, provide the optimum solution)’. (para 112).

Para 20 b) of the NPPF also indicates that strategic policies should make sufficient provision for telecommunications.

UK Digital Strategy

7.4 Published in March 2017, the UK Digital Strategy², builds upon the Government’s Digital Communications Strategy (DCIS 2015)³ and National Broadband Strategy (2010),

² Department for Culture, Media & Sport – Policy Paper – UK Digital Strategy 2017 (Published 1st March 2017) - <https://www.gov.uk/government/publications/uk-digital-strategy>

³ The Government’s ‘Digital Communications Infrastructure Strategy’ (DCIS) builds upon the goal for the UK to have the best superfast broadband network in Europe³ with a challenging focus upon making available ultrafast broadband of at least 100Mbps to nearly all UK premises. It is estimated that improvements in digital connectivity have supported a strong digital economy within the UK, currently worth more than £120 billion each year. The digital sector³ has grown over seven times faster than the economy as a whole between 2008 and 2013.

[In 2013, the digital sector contributed 7.5% (£113 billion)].

as well as the post-Brexit Britain Industrial Strategy (Green Paper) to set out a forward plan for the UK's digital economy.

7.5 The UK Digital Strategy sets out seven key themes for a post-Brexit digital economy in the UK, which are summarised below:

- Building world-class digital infrastructure for the UK – continue to complete the roll-out of 4G and superfast broadband by 2020, but also implement a Universal Service Obligation, giving every individual, business and public premise across the country the right to request an affordable high-speed broadband connection. Also invest over £1 billion to accelerate the development and uptake of next generation digital infrastructure - including full fibre and 5G.
- Giving everyone access to the digital skills they need – ensure all adults in England have access to the basic digital skills training and establish a new Digital Skills Partnership to tackle the digital skills gap and coordinate activity on job promotion. The strategy also focuses upon delivering coding in the National Curriculum, and other areas of skills development.
- Making the UK the best place to start and grow a digital business – creating the right conditions for growth, to encourage innovation-friendly regulation that creates a positive context for the adoption of new technologies and an investment of an additional £4.7 billion by 2020-21 in R&D funding. Priority challenges include helping the UK capitalise on its strengths in science and innovation such as robotics, clean energy and biotechnology.
- Helping every British business become a digital business – ensure businesses have the knowledge and means to access technology, working on existing initiatives, and plug gaps where there are specific challenges. Funding of £13m to be set aside for the development of a private sector led Productivity Council to drive engagement to improve productivity across the economy, including through appropriate use of digital technologies.
- Making the UK the safest place in the world to live and work online – continue to support the National Cyber Security Centre to provide a single point of contact for companies for cyber threats and attacks and introduce a new approach of Active Cyber Defence, using the skills, knowledge and technical expertise of GCHQ working with the country's ISPs (internet service providers) to provide a new level of protection for British cyberspace. Focus also upon national after-school programmes, apprenticeships and adult retraining cyber security and improve security / safety for children using online content.
- Maintaining the UK government as a world leader in serving its citizens online – working towards 25 million GOV.UK Verify users by 2020 and adopting new services onto the government's GOV.UK Pay and GOV.UK Notify platforms and continue work, across government and the public sector, to harness the potential of digital to radically improve the efficiency of our public services -

enabling us to provide a better service to citizens and service users at a lower cost.

- Unlocking the power of data in the UK economy and improving public confidence in its use – continue to ensure that UK businesses can compete and communicate effectively around the world and implement the General Data Protection Regulation by May 2018.

Planning for Growth

7.6 Although seen by some as a new thing, research on fibre optic infrastructure has indicated that fibre has been in common usage with carriers and service providers since as long ago as the 1980s. Within such organisations fibre communication speeds in the 1 Terabit per second range have been achieved and lower speeds in the 10s and 100s of Gigabits per second are commonplace, as are fibre distances in the 10s, 100s and even 1000s of miles. Fibre as a public resource is however less well understood as it is only recently appeared as an end user service in the form of Full Fibre Broadband and so called ‘dark fibre’, where end users connect directly using their own equipment. Particular sectors with high demands for broadband and fibre include:

- corporates - frequently require symmetrical (same speed upload and download) and uncontended (dedicated not shared with other users) and much higher speed connections ‘Pipes’ due either to high demand processing or due to many users within an office. Enhanced security is also increasingly very important in some sectors;
- carriers & ISPs - 4/5G Mobile Cell Tower/ Pico/FemtoCell backhaul and Public Wifi Backhaul connections;
- financial traders – algorithmic Platforms need very low latency (delay on server response times) and many banks need encryption due to regulatory and corporate requirements;
- media production facilities – using extremely large data files, unusual protocols, with high reliability and ultra-high speeds;
- next generation medical drug treatments tailored to the individual, requiring industrial scale genetic sequencing in order to address large populations and
- data centres – where specialist protocols, ultra-high capacities and low latency connections are a common requirement.⁴

⁴ Information from Stephen Pegrum ‘Technology Change, Growth & Planning’ presentation for Brentwood Borough Council

EXISTING INFRASTRUCTURE, GAPS AND PROGRAMMES

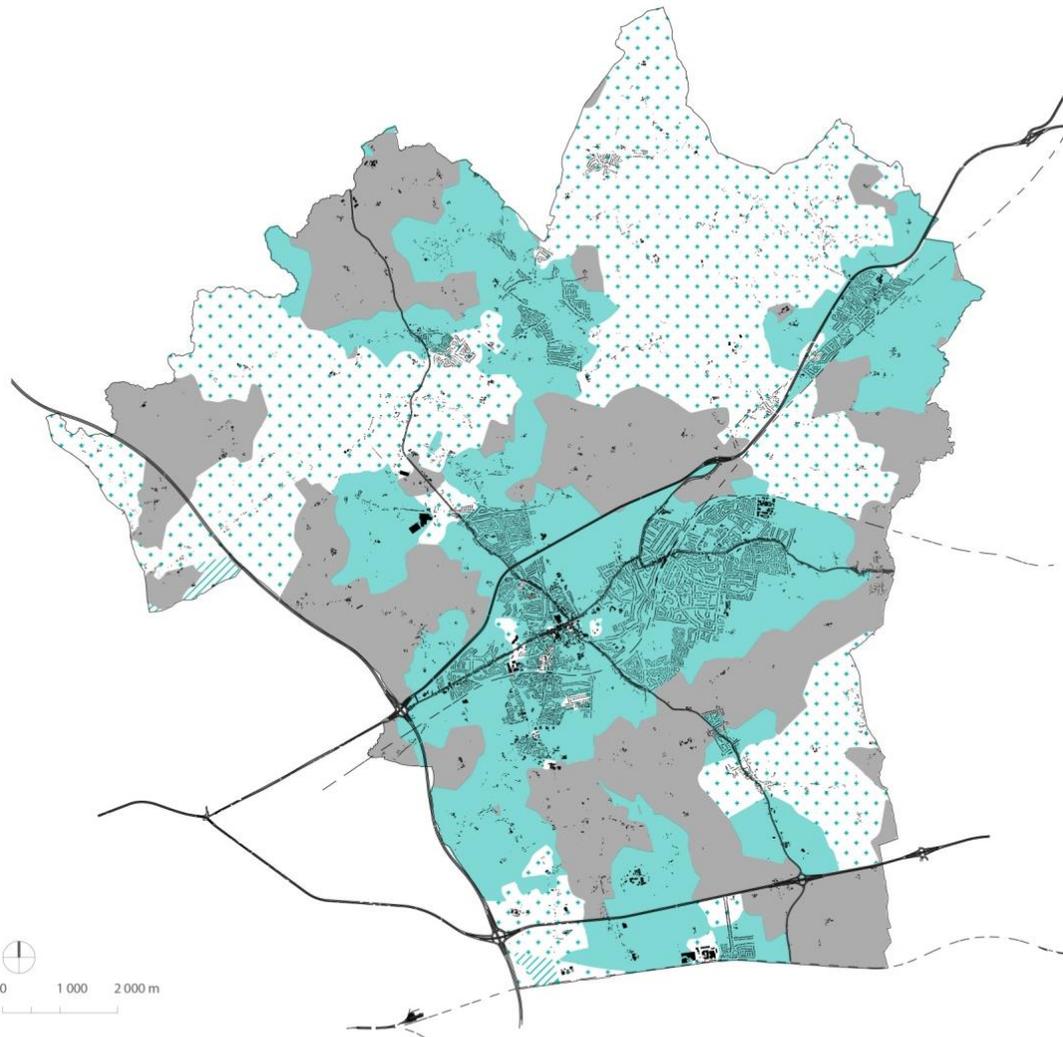
Broadband

- 7.7 Superfast Essex is the county's broadband improvement programme co-ordinated by Essex County Council, and part of the Government's national Superfast Britain programme. Across Essex, the programme is enabling as many homes and businesses as possible to access superfast broadband to enable economic growth and improve residents' quality of life.
- 7.8 Figure 7.1 below provides a snapshot of broadband coverage across the Brentwood Borough as at Autumn 2016, with at the time funding / improvement options. It provides an overview of Broadband at a particular point in time. Further individual property information is available through an interactive mapping system⁵. The map indicates potential deficits in broadband coverage towards the north and south of the Borough.
- 7.9 It should also be strongly emphasised that while so called Fibre Broadband is available in the Borough via BT Openreach, in reality this is Fibre to the Cabinet (FTTC) broadband where the fibre is connected to the Green Cabinets seen at many street corners, with the rest of the connection to homes and businesses being made on the old fashioned Copper wires originally intended for traditional phone lines. Fibre to the Premises (FTTP) services offer dramatically higher speeds than FTTC, currently well into the Gigabit per Second range. BT and its affiliates do not offer FTTP services in the Borough and none are known to be planned at this time. Specialist FTTP providers such as Gigaclear also do not operate in the area due to the prevalence of FTTC services that even so tend only to address urban areas.
- 7.10 Figure 7.2 provides information on fibre optic cabling (excluding BT and Virgin Media) in relation to the Brentwood area. It shows cabling running through Borough from north to south and a loop of cabling towards the south of the Borough.⁶ However this fibre tends not to be available directly to end users because it belongs to various network operators who sell it to particular customers. For end users and SMEs therefore this indicates both a problem and an opportunity should things change in the way fibre based services are sold. It is also notable that locations as close as Southend are now deploying FTTP services through an arrangement with the council.

⁵ <http://essex.astuntechnology.com/atsuperfastsolophase2.html>

⁶ Information from Stephen Pegrum 'Technology Change, Growth & Planning' presentation for Brentwood Borough Council

Figure 7.1: Broadband Coverage



- Fibre or wireless broadband available
- Fibre broadband planned
- Better Broadband Scheme available. Area eligible for future investment
- Not in current plans

Source: Reproduced from www.superfastessex.org/maps as of November 2016

Figure 7.2: Fibre Optic Cabling (excluding BT and Virgin Media)



7.11 Although not detailed on any plans it is understood that there is dark fibre⁷ or at least duct space into which fibre could easily be deployed within Brentwood, linked to the Council's CCTV infrastructure. There may also be other infrastructure across the Borough such as buildings (for antennas and ducts) and public land across which the borough could if it chose, facilitate the use of for such deployments, as has been done in nearby towns such as Southend as well as Physical Infrastructure Access service from Openreach.

Fibre Projects

7.12 Cross local authority work has been progressing to look at strategy and funding options for enhancing fibre optic cable infrastructure connecting potential high-volume users, including employment sites. There are particular implications for this project linked to the A127 corridor sites.

Mobile Communications

7.13 Mobile phone network provision is an important component of a modern economy and has a vital social function. With development in smart phone technology and mobile internet services, mobile phones are increasing important for e-commerce and

⁷ Dark fibre - unused optical fibre potentially available for use in fibre-optic communication – often laid alongside other cabling as part of infrastructure / communications works.

access to services such as on-line banking. Figures released by IMRG and Capgemini indicate that mobiles and tablets now account for more than half of all online sales in the UK.⁸ As indicated at the beginning of the chapter, the full potential of smart phones has yet to be fully realised with increasing functions and features.

7.14 Figure 7.3 below outlines the range of IT, mobile and media activities by device, showing the strong and increasing performance and increasing dominance of smartphones.⁹

Figure 7.3: Activities by Device

	Total	Male	Female	18-24	25-34	35-44	45-54	55-64	65+
Browse shopping websites									
Make online purchases									
Online search									
Watch short videos									
Check bank balances									
Video calls									
Check social networks									
Read the news									
Play games									
Voice calls using the Internet (VoIP)									
Take photos									
Record videos									
Stream films and/or TV series									
Watch TV programs via catch-up services									
Watch live TV									

7.15 The infrastructure required for mobile communication includes plant and equipment, including communication masts. If accessing mobile coverage, mobile phones, dongles and tablet computers cannot work without a network of base stations (masts). If the base stations are too far apart, the service can be interrupted. Base stations are usually built about 200 to 500m apart in towns and 2 to 5km apart in rural areas. Base stations can only support a maximum of 120 calls at any one time.

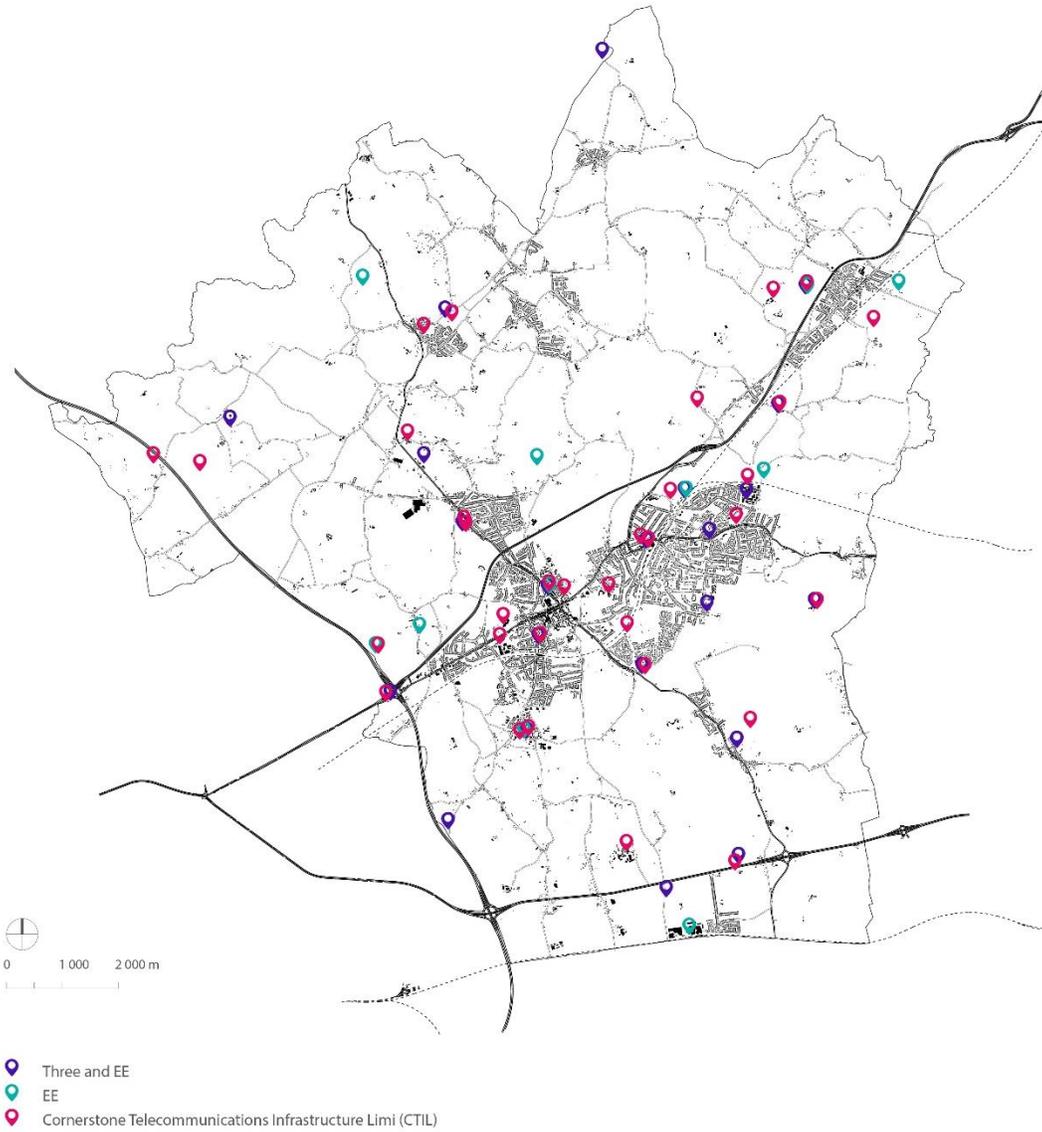
⁸ During the period of November 2015 to January 2016, 51 per cent of UK online retail sales happened via mobile, a significant increase on the 45 per cent share recorded during Q3 2015. Desktop and laptop accounted for 49 per cent of ecommerce sales, 33 per cent of sales came via tablets and 18 per cent via smartphones. Source – E-commerce News and www.thedrum.com.

⁹ Information reproduced from Deloitte Global 2018 TMT Predictions Report.

- 7.16 The Mobile Operators Association Annual Rollout Plan has historically provided up to date information on the mobile signal / broadband infrastructure and was last issued for the Brentwood Borough in 2015/16. The Association is no longer operational.
- 7.17 A copy of the last version of the Mobile Operators Association Annual Rollout Plan (MOAARP) 2015/16 for the Brentwood Borough is included with the IDP as Appendix x. This Appendix also includes 5 additional Vodaphone sites built within 2016. Information has been taken from the MOAARP and the Open Signal¹⁰ mobile data to provide an indication of mobile network signal strength across the Brentwood Borough. Figure 7.3 provides information on mobile masts while Figure 7.4 indicates signal strength using Open Signal mobile data. Weaker mobile coverage is concentrated within the Borough's rural or green field areas. This feature is particularly noticeable to the north of the Borough.
- 7.18 It should be noted that there is likely to be a dramatic increase in the need for mobile radio masts across all regions with the deployment of 5G networks that are necessary to support the smaller cell sizes required to support higher data rates. In turn this will also drive an increase in the need for fibre based backhaul connections between such cell sites and their central nodes.

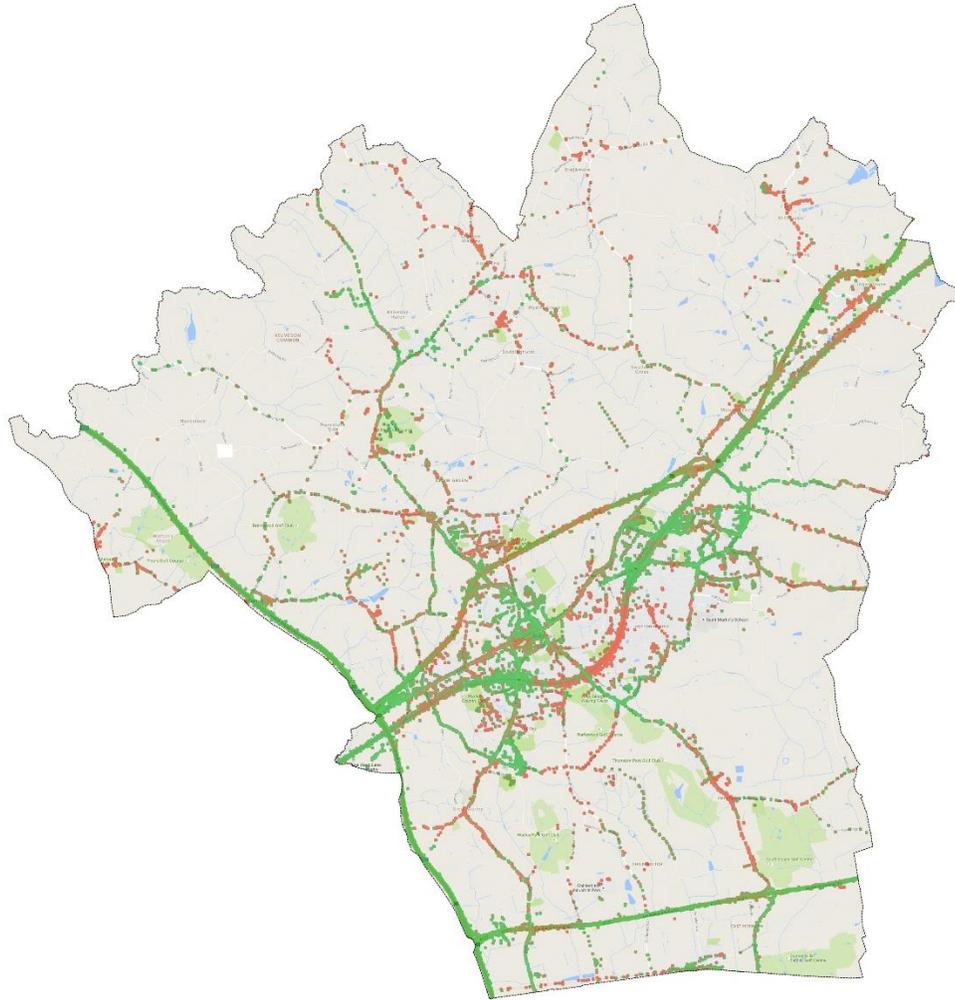
Figure 7.3: Mobile Masts

¹⁰ <https://opensignal.com/> - OpenSignal is a company that specializes in wireless coverage mapping. The company crowdsources data on carrier signal quality from users who have its consumer mobile application installed

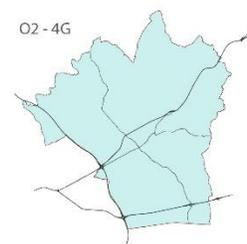
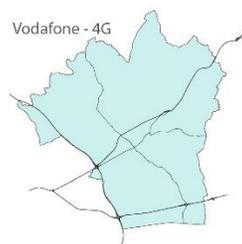
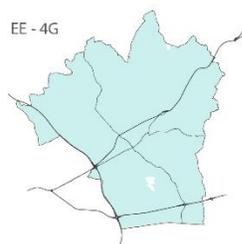
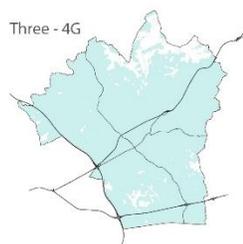


A copy of the last version of the Mobile Operators Association Annual Rollout Plan (MOAARP) 2015/16 for the Brentwood Borough is included with the IDP as Appendix x. This Appendix also includes 5 additional Vodafone sites built within 2016. Information has been taken from the MOAARP and the Open Signal [1] mobile data to provide an indication of mobile network signal strength across Brentwood Borough.

Figure 7.4: Mobile Coverage



- Weak signal
 - Strong signal
 - No data collected
- Source: <https://opensignal.com/>



- Areas likely to have sufficient signal to use 4G data services reliably
 - Areas unlikely to have sufficient signal to use 4G data services reliably
- Source: www.ofcom.org.uk

Other Telephone Infrastructure

- 7.19 No specific information was available at the time of publication, regarding the range of locations of BT public phone boxes across Brentwood. In line with BT's strategy in other parts of the UK, the company indicated in 2016 that it would like to disconnect a significant quantity of telephone boxes across Essex County - around 300 in total.¹¹ BT has indicated that it has seen a 90% decline in pay phone usage over the last decade. However, Ofcom has indicated that phone boxes can provide a useful service for people who don't have any kind of phone or for people who find that their mobile phone isn't working.¹² BT now offers an 'Adopt a Kiosk' programme for local communities to take ownership of local phone boxes for a variety of uses and as part of the valued local heritage.

IMPLICATIONS AND OPPORTUNITIES OF GROWTH

- 7.20 There are clear opportunities available to improve current broadband and mobile technology across the Borough – particularly in poorer served areas to the north and south of Brentwood. In line with NPPF priority needs to be placed in the Local Plan to supporting where possible full fibre connections to existing and new developments. There are also opportunities with fibre optics in particular as part of a sector driven approach to economic growth and opportunities along the A127 corridor and within Brentwood town.
- 7.21 The provision of new and enhanced broadband and mobile coverage is also a clear business opportunity. There is strong market demand amongst residents and prospective new residents for effective broadband and mobile technology to not only provide 'the basics' of reliable mobile phone coverage and fast broadband connections but also increasing smart house technology for assisting in the running of properties. Estate agents also report that an increasing number of buyers are willing to pull out of a deal if broadband is not available in that area. The property search website rightmove.co.uk has added a broadband speed checker to every one of its listings, alongside details of transport links and schools. Given the market demand for broadband, and the fact that costs per unit for larger sites are usually cost neutral (except for fibre to the door / curb infrastructure), it makes good business sense to ensure that new developments include high speed broadband infrastructure as a matter of course.
- 7.22 If broadband installation is integrated into the planning of developments as early as possible, it may be possible to mitigate costs of installation through electricity and broadband cables sharing the same infrastructure assets, routes or networks. Potential

¹¹ <http://www.itv.com/news/anglia/2016-10-26/people-see-red-over-plans-to-remove-1-000-public-phone-boxes/>

¹² https://www.ofcom.org.uk/__data/assets/pdf_file/0035/47879/removing_callboxes.pdf

savings of 16-26% could be achieved where existing infrastructure is used to rollout broadband.¹³

- 7.23 It is recommended that further auditing / review work is undertaken on broadband / mobile technology improvements as part of a refresh on the IDP.
- 7.24 It has been noted that the increased prevalence of high quality network infrastructure can be a driver for general economic growth. According to a study by Deloitte and GSMA summarised in the following statement:

'For a given level of total mobile penetration, a 10% substitution from 2G to 3G penetration increases GDP per capita growth by 0.15 percentage points'.¹⁴

It has been anticipated that similar growth can be anticipated by each technology generational change e.g. 3G to 4G to 5G mobile and DSL to FTTC to Full Fibre fixed networks.

FINANCIAL IMPLICATIONS

- 7.25 Part B of the IDP includes calculations on the cost of supplying fibre to the door / curb, which equate to circa £880 per dwelling based upon European Research.¹⁵ Although it is likely that innovation in this area could later such estimates considerably.
- 7.26 Funding should also be set aside to support local fibre adoption strategies where commercial interest is more limited. Further up to date information is also required on mobile and fibre optic capacity and opportunities across the Borough. It should be noted that planning and highways regulations can have a highly beneficial effect on the cost of deploying new fibre services, such as mandating the provision of duct infrastructure while roads are opened for other works such as gas, electricity or water, where the low incremental cost of such work could have a very minor effect. Although it may be difficult to provide a contiguous duct connection from end to end, where such infrastructure is available it can have a significant effect on the overall cost once such sections are joined.

¹³ Information on the benefits of installing high speed broadband taken from Colchester Borough Council – 'Planning for Broadband' February 2016.

¹⁴ Reference to be added

¹⁵ Reference to add.

08 EDUCATION AND EARLY YEARS



OVERVIEW

Education Provision - General

- 8.1 Education infrastructure is often a critical factor for families when considering where to live, with good quality education facilities often creating a strong local demand for housing within the catchment areas of popular and successful schools. In general terms, education infrastructure can be defined as:
- early years and nursery provision;
 - primary school provision;
 - secondary schools (with and without sixth forms);
 - special schools
 - post-16 education and training, and
 - adult community learning.
- 8.2 With regard to early years provision, as a local authority, Essex County Council has a duty through the Childcare Act 2006, to ensure, as far as reasonably practicable, that there is the provision of sufficient, sustainable and flexible childcare that is responsive to parent's needs. Section 7 of the Act specifically sets out a duty to secure free early years provision for pre-school children. The current regulations prescribe that every child aged three or four is entitled in England to get 570 free childcare hours per year, which is usually taken as 15 hours a week for 38 weeks of the year. Qualifying families are also eligible for 30 hours free childcare a week for 3-4 years old. Approved childcare providers include: registered childminder, playscheme, nursery or club; childminder with an Ofsted-registered childminding agency; registered school and home careworker working for a registered home care agency.
- 8.3 Under section 14 of the 1996 Education Act, local authorities must secure sufficient school places to serve their area. The available schools must be sufficient in number,

character and equipment to provide all pupils with the opportunity of an appropriate education. Section 2 of the 2006 Education and Inspections Act further places Essex County Council, as the appropriate local authority, under a duty to secure diversity in the provision of schools and increase opportunities for parental choice. Subsequent legislation has encouraged the development of a more diverse range of education providers, particularly Academy Trusts and Free Schools.

8.4 It is recognised that the range and types of schools available in England can be confusing and has changed dramatically over recent years to include¹:

- **Community schools** - controlled and run by the Local Education Authority (LEA), the LEA owns the land and buildings and determines admission arrangements;
- **Foundation schools** – funded by the LEA, but run by a school governing body. The governing body is the admissions authority and employs staff. The school land and buildings are generally owned by the governing body or a charitable foundation;
- **Trust school** – type of foundation school which forms a charitable trust with an outside partner – land is owned by the trust and run by a governing body;
- **Voluntary aided school** – usually religious or faith schools, which are supported by the LEA and supporting body – the governing body employs staff and decides admission arrangements. The land and buildings are normally owned by a charitable foundation and the governing body contributes to building and maintenance costs.
- **Voluntary controlled school** – similar to voluntary aided but funded solely by the LEA. The LEA is the admission authority and consults with the supporting body in drawing up admissions policy. The land and buildings are usually owned by a charitable foundation. The Local Education Authority employs the school staff and has responsibility for admissions
- **Academies** - state funded with power to direct their own curriculum. Academies are established by sponsors from business, faith or voluntary groups in partnership with the Department for Education working with the community. Together these fund the land and buildings with the Government covering the running costs. Academies can be flexible with their curriculum, term dates, and staffing to meet local needs and are the admissions authority.
- **Free school** – type of academy funded by government but not controlled by the LEA. Teachers, parents, existing schools, educational charities, universities, or community groups can set up free schools. The group must form a company and choose members and directors to run it.

¹ Types of schools descriptions summarised from <https://childlawadvice.org.uk/information-pages/types-of-school/>

- **Specialist school** – follow the national curriculum and can focus upon can become a specialist school in areas such as technology, language, sports or arts.
- **Faith schools** - religious led schools which are usually voluntary controlled and responsible for setting their own admission policies and teach religious education according to its religious precepts. Faith schools admit pupils on religious affiliation grounds but many admit those who are not of the school faith and voluntary aided faith schools have to comply with the school admissions code of practice.
- **Grammar schools** - similar to foundation schools but are permitted to select pupils by ability. They are funded by the Local Authority, but run by the governing body, which acts as admission authority.
- **Special education needs schools** - Local Authorities fund some special schools to meet the needs of pupils who have a Statement of Special Educational Needs or Education Health and Cre Plan are unable to attend a mainstream school due to their special educational needs. Many special schools are independent schools and are not funded by Local Authorities.
- **City technology colleges** - funded partly by the government and partly by independent organisations they offer a wide range of vocational qualifications alongside GCSEs and A-levels for pupils aged 11-18. The governing body will act as the admission authority and create its own admission policy. The schools tend to focus upon vocational qualifications alongside the national curriculum.
- **Independent schools** - may be described as private or public schools and are funded by the fees paid by the parents of pupils, contributions from supporting bodies and investments. They are not funded or run by central government or a Local Authority they set their own curriculum but all must be registered with the Department for Education and are regularly inspected by the Independent Schools Inspectorate to ensure that standards are maintained.

8.5 Brentwood has a wide range of schools, including independent schools. The main focus for Chapter 8 is however upon free to access non-independent schools.

8.6 For over 18 education and training provision, the Adult Community Learning Essex (ACL) organisation offers a range of learning opportunities for both individuals and businesses. Other information to add.

8.7 Demographic headlines – schools The population of Brentwood Borough has steadily risen with an increase of 7.56% between 2001 and 2011 (*Census 2011*). Births in Brentwood are relatively stable, but the trend over time also shows an increase. Natural change in the composition of the population indicates that there will be a deficit of existing primary school places in the period 2012-2017 which is further exacerbated by new housing.

EXISTING INFRASTRUCTURE, GAPS AND PROGRAMMES

Early Years and Childcare Provision

- 8.8 The early years and childcare sector includes a wide range of provision which often means that the County Council acts as a facilitator to the childcare marketplace – working in partnership with the private, voluntary and charitable sectors to enable a wide range of childcare options to be available. Demand for early years and childcare provision is driven by the quality of provision, housing and also employment-led development, as people look to access care for pre-school children within quick access of home or places of work.
- 8.9 Essex County Council (ECC) has a duty to ensure, as far as reasonably practicable that there is sufficient childcare across Essex to meet the needs of parents. This is called childcare sufficiency, with ECC required to publish a ‘Childcare Sufficiency Assessment’ every three years to give a portrait of the local supply and demand for childcare. Within ECC, a multi-agency County Childcare Sufficiency Strategy Group meets frequently across the academic year to consider new information and issues affecting childcare sufficiency. The group looks at childcare occupancy data (which is collected each term), any local parental consultation data, information on proposed housing developments and local knowledge of the childcare settings within the authority, to produce Local Childcare Sufficiency Action Plans targeted at addressing matters arising.
- 8.10 The Summer 2016 sufficiency data is detailed in Figure 8.1 for the Brentwood Borough². From this figure it can be noted that the largest single category of childcare provision is from childminders at 51 settings or 38% of the overall provision. Pre-schools make up the second largest grouping at 28 settings or 21% of the overall provision. The Warley Ward has the largest number of total early years settings (14 in total), with Brentwood North and Hutton North Wards each with 12 settings. Hutton South has the lowest level of settings at 4 locations.

² The childcare sufficiency map is updated annually and last updated using data from 2017. This section of the IDP will be updated shortly from the 2016 base data. <https://www.essex.gov.uk/Education-Schools/Early-Years-Childcare/Find-a-provider/Pages/Childcare-sufficiency-map.aspx>

Figure 8.1: Early Years Provision (2016 Base Data)

Wards	Childminder	Holiday Club	Breakfast Club	After School Club	Primary School Nursery	Pre-school	Day Nursery	Independent Nursery	Total
Tipps Cross		1	1	1	1	2			6
Brizes and Doddinghurst	4		1	3		2	1		11
Ingatestone, Fryerning and Mountnessing	4		1	1		1	2		9
Pilgrims Hatch	2	1				2	1		6
South Weald	6					1			7
Brentwood North	6	1	1	1		1	2		12
Shenfield	3		1	2		2	2		10
Hutton North	3		2	3		3	1		12
Hutton South	2					1		1	4
Hutton Central	4		2	2		3			11
Hutton East	3	1					2	1	7
Brentwood West	7		1			1	1		10
Brentwood South	2	3				3	1		9
Herongate, Ingrave and West Horndon	1		2	2		2			7
Warley	4		1	1		4	2	2	14
Total Number of Settings	51	7	13	16	1	28	15	4	135
% of Total Settings	38%	5%	10%	12%	1%	21%	11%	3%	101%

8.11 Ward level information from 2016 on potential early years and nursery capacity issues is detailed below in Figure 8.2. It indicates potential challenges to provision in Brentwood North, Brentwood South, Brizes and Doddinghurst, Herongate, Ingrave and

West Horndon, and Ingatestone, Fryerning and Mountnessing, Pilgrims Hatch, Shenfield, South Weald and Tipps Cross wards.

Figure 8.2 Review of Early Years – Potential Capacity Issues

Ward Name	Number of available 2 YO funded places	Number of available 3 YO funded places	Over 80% Capacity *	Current Childcare Sufficiency Issues
Brentwood North	0	4	2	There are very few funded places available- which will cause particular issues with any further developments or the 30 hour offer.
Brentwood South	5	13	2	Limited number of 2 YO funded places.
Brentwood West	0	6	0	Even though the data depicts that none are over 80%, there is clearly a need due to the limited 2 and 3-4 YO funded places
Brizes and Doddinghurst	2	0	2	There are very few funded places available- which will cause particular issues with any further developments or the 30 hour offer.
Herongate, Ingrave and West Horndon	0	9	2	No full day care available
Hutton Central	4	6	0	Limited amount of settings returned forms, however limited full day care opportunities within this ward.
Hutton East	0	12	1	No available 2 YO funded places.
Hutton North	0	28	3	The majority of 3-4 year old funded vacancies are all in one setting.
Hutton South	0	2	1	The majority of 3-4 year old funded vacancies are all in one setting.
Ingatestone, Fryerning and Mountnessing	2	6	1	There are very few funded places available- which will cause particular issues with any further developments or the 30 hour offer.
Pilgrims Hatch	0	6	1	There are very few funded places available- which will cause particular issues with any further developments or the 30 hour offer.
Shenfield	0	0	1	Lack of current information on capacity – cautionary approach taken.
South Weald	3	5	0	There are very few funded places available- which will cause particular issues with any further developments or the 30 hour offer.
Tipps Cross	6	7	1	There are very few funded places available- which will cause particular issues with any further developments or the 30 hour offer.
Warley	10	17	3	No major issues identified at this stage.

Primary School Capacity – Published Data

- 8.12 In the 2016/17 academic year, there were 5,771 pupils at Essex Local Authority primary and nursery schools (including academies). This equates to about 4.85% of the total primary and nursery pupil numbers in Essex schools (118,915).³
- 8.13 With the introduction of greater autonomy and range in the provision of education and the increasing number of academies, the role and responsibilities of local education authorities has changed. The County Council acts as a commissioner rather than a provider of new schools. It has the duty to set out the requirements for any new school needed to serve a new community in order that potential providers may express their interest in providing that school. Where a Section 106 agreement provides the land and funding for a new school, the County Council will usually procure the school building and then transfer the new building for the successful provider to occupy.
- 8.14 Regardless of whether schools have Academy status, are Free Schools, or are maintained schools, the County Council remains the responsible authority for ensuring that there are sufficient school places available within the county to meet the educational needs of its school age (5-19 years) population. This means that the County Council remains the appropriate authority to assess the requirements for school place provision for any new housing developments; be a signatory to any S106 agreement and receive the appropriate contributions.
- 8.15 Essex County Council publish data on the current and forecast capacity of existing primary schools in Essex in the publication 'Commissioning School Places in Essex' (latest edition 2017-2022 at the time of drafting). The LEA also publishes a rolling 10-year plan ('Meeting the demand for school places in Essex 10-Year Plan') which takes into account the new forecasts, the capital budget setting cycle, and potential options and solutions that have been identified since the previous version.
- 8.16 The schools are grouped under broad planning group areas within the publications which are set by the LEA to consider strategic school place planning across various spatial areas. Published figures for 2016/17 indicate a surplus of primary school places within Brentwood Planning Group area (157 places); surplus within Ingatestone / Mountnessing Planning Group area (26 places); surplus within Doddinghurst / Kelvedon Hatch Planning Group area (70 places) and a deficit of 8 places within Not Group / Other planning area (west Horndon)⁴.
- 8.17 However, when you take into consideration demographic modelling and an uplift for new developments (generally planning permissions), and forecast through to 2021/22 the published figures are quite different and detailed below in Figure 8.2. It can be noted that by 2021/22 there is a forecast deficit in school places within the Brentwood Town (Group 1) and Other / Not Grouped (Group 4 – West Horndon) areas.

³ Source: Essex County Council: Commissioning School Places in Essex 2017-2022.

⁴ Two of the schools within Brentwood Town Group 1 (Larchwood Primary and Hogarth Primary) listed in Figure 8.2 have been subject to recent investment to increase the level of pupil spaces and improve school facilities.

Figure 8.2: Primary Schools - Planning Group Data

Primary School	Net School Future Capacity (2017/18)	Forecast Surplus / Deficit (including housing adjustment for planning permissions) (2021/22)
BRENTWOOD TOWN (Group 1)	4855	-39
Grouped Schools: Bentley St Paul's Church of England (Voluntary Aided) Primary School, Hogarth Primary School, Holly Trees Primary School, Hutton All Saints' Church of England Primary School, Ingrave Johnstone Church of England (Voluntary Aided) Primary School, Larchwood Primary School, Long Ridings Primary School, St Helen's Catholic Junior School Academy, St Helen's Catholic Infant School, St Joseph the Worker Catholic Primary School, St Mary's Church of England (Voluntary Aided) Primary School, Shenfield, St Peter's Church of England (Voluntary Aided) Primary School, South Weald, St Thomas of Canterbury Church of England (Aided) Infant School, Brentwood, St Thomas of Canterbury Church of England (Aided) Junior School, Brentwood, Warley Primary School and Willowbrook Primary School.		
INGATESTONE / MOUNTNESSING (Group 2)	432	18
Grouped Schools: Ingatestone and Fryerning Church of England (Voluntary Aided) Junior School, Ingatestone Infant School and Mountnessing Church of England (Voluntary Controlled) Primary School.		
DODDINGHURST / KELVEDON HATCH (Group 3)	810	24
Grouped Schools: Blackmore Primary School, Doddinghurst Church of England (Voluntary Controlled) Junior School, Doddinghurst Infant School and Kelvedon Hatch Community Primary School.		
OTHER / NOT GROUPED (Group 4)	125	-21
Grouped School: West Horndon Primary School		
GRAND TOTALS	6222	-18

8.18 It is generally accepted that education provision in an area should not operate at 100% of its capacity, as it is important to retain some level of surplus places. The National Audit Office report 'Capital Funding for New School Places' (2013) refers to a minimum 5% surplus that the Department for Education assumes in its planning as necessary to support operational flexibility (mid-year admissions) and facilitate parental choice. A

deficiency may thus be deemed to exist without the certainty of every local place being filled.

- 8.19 In order to address some of the immediate primary school pressures within the Brentwood Town Group 1 area, the LEA is seeking to expand Warley Primary School by 1 form entry (1fe) with a scheduled opening in 2019. Within the Group 4 area, West Horndon Primary School is also to be expanded by half a form entry (0.5fe) to accommodate current pressures.

Secondary School Capacity – Published Data

- 8.20 In the 2016/17 academic year there were 7,261 pupils at secondary schools in Brentwood Borough. This equates to about 8.58% of the total secondary pupil numbers in Essex schools (84,672 pupils).⁵
- 8.21 There are two planning group areas for secondary schools within Brentwood and the total published figure covering both areas for 2016/17 indicates a surplus of 921 places, driven in part by the development of a new free school (Becket Keys Church of England) which opened in 2012.⁶
- 8.22 Along similar lines to the primary school data, Figure 8.3 below indicates net school capacity (2017/18) and forecast surplus / deficit in pupil places (including an adjustment for planning permissions) to 2021/22 for secondary school grouped areas. It indicates a net surplus of 385 pupil places across the combined planning group areas, but with potential deficit in places at the Anglo European School.

Figure 8.3: Secondary Schools - Planning Group Data

Secondary School	Net School Future Capacity (2017/18)	Forecast Surplus / Deficit (including housing adjustment for planning permissions) (2021/22)
BRENTWOOD TOWN (Planning Group 1)	6844	425
Grouped Schools: Becket Keys Church of England Free School, Brentwood County High School, Brentwood Ursuline Convent High School, Shenfield High School and St Martin's School.		
OTHER / NOT GROUPED	1338	-40
Anglo European School		
GRAND TOTALS	8182	+385

⁵ Source: Essex County Council: Commissioning School Places in Essex 2017-2022.

⁶ Source: Essex County Council: Commissioning School Places in Essex 2017-2022.

- 8.23 It should be noted that the figures published in Figures 8.2 and 8.3 are dated with new forecasts expected in Autumn 2018.
- 8.24 There are no immediate plans for major expansion of secondary school provision within the Brentwood Borough based upon current need.

Special Education Needs

- 8.25 There are two special schools within Brentwood Borough – the Endeavour School and the Grove House School. Each school has a small pupil intake (118 pupils at the Endeavour School and 105 pupils at The Grove House School). It is understood that there are physical capacity constraints at the Endeavor School which limits options for the school to extend into a sixth form offer to support existing pupils looking to continue their education and provide a facility for pupils moving from other Brentwood schools.
- 8.26 The Endeavor School has identified a gap in the provision of sixth form facilities and continued learning opportunities for students attending the school and pupils requiring specialist education services from other schools. It is recognised within the sector that there is a high educational drop-out rate of pupils originally from specialist schools who attend post-16 education facilities outside the specialist school network or embark on apprenticeships or work orientated training courses. It is envisaged that this new facility would accommodate space for about 60 post-16 pupils.

Post 16 Education and Training and Adult Community Learning

- 8.27 Adult Community Learning (ACL) Essex, run a wide range of daytime and adult learning courses including, arts and crafts, English and maths, English for Speakers of Other Languages (ESOL), general interest courses and languages. The Brentwood learning venue is based at Bishops Hill, Hutton.

IMPLICATIONS OF GROWTH

- 8.28 The development site information used to underpin the findings in this section is further detailed in Chapter 2 of the IDP.

Early Years and Childcare Provision

- 8.29 An analysis has been undertaken of the potential implications of new development on child yield for early years and nursery provision. This assessment uses the following formulas:

- formula 1 (residential schemes): estimated site dwelling capacity x child yield per qualifying dwelling type, and
- formula 2: (employment schemes): site size x ratio of floorspace by employment type x employment density per employment type x child places per 100 employees.

For residential developments, the child yield from qualifying houses is nine children per one hundred homes (0.09 per dwelling) with half this number expected from qualifying flats i.e. 0.045 per dwelling. These figures are derived from The Essex County Council Developers' Guide to Infrastructure Contributions (Revised Edition 2016).

- 8.30 When estimating the number of early years and childcare places that a new employment proposal will require, a factor of four places per one hundred employees is used. In the absence of detailed site information for employment, The Homes and Communities Agency 'Employment Density Guide' (3rd Edition) November 2015 is used as a starting point for employment density calculations, following the application of standard site hectare to floorspace conversions for various use employment use classes.
- 8.31 Figure 8.4 below provides an assessment of child yield arising from the proposed Local Plan housing sites. Some of the numbers in the figure are highlighted in blue which indicate higher child yield rates, linked to sites with higher levels of family housing. It is general practice to link new early years provision to new primary schools where there is capacity to do so. Further discussions are required with ECC over the exact location of early years provision linked to housing-led growth.
- 8.32 Figure 8.5 provides information on potential child yield demands arising from employment allocations. This would tend to indicate employment-led potential early year requirements at West Horndon / Dunton Hills and Brentwood Enterprise Park.

Figure 8.4: Local Plan Housing Sites: Potential Early Years and Child Yield

Allocation Ref	Site Name	Approximate Postcode	Typology Summary			Total	Early Years
			DU	F	H		
020	West Horndon Industrial Estates	CM13 3XL	50	40	110	200	12
021 / 152	West Horndon Industrial Estates	CM13 3XL	140	80	160	380	18
200	Dunton Hills Garden Village (200)	CM13 3LT	330	610	2560	3500	258
044 / 178	Land at Priests Lane, Brentwood	CM15 8BJ	0	0	95	95	9
186	Land at Crescent Drive, Shenfield	CM15 8DS	10	35	10	55	2
002	Brentwood railway station car park	CM14 5EZ	70	30	0	100	1
039	Westbury Road Car Park, Westbury Road, Brentwood	CM13 1AL	18	9	18	45	2
040	Chatham Way / Crown Street Car Park Brentwood	CM14 4BG	15	0	16	31	1
041	Land at Hunter House, Western Road, Brentwood	CM14 4SS	37	11	0	48	0
102	William Hunter Way	CM14 4SS	115	150	35	300	10
083	Land west of Warley Hill, Pastoral Way, Warley	CM14 5WF	6	12	22	40	3
003	Wates Way Industrial Estate, Ongar Road, Brentwood	CM15 9TB	60	20	0	80	1
010	Sow and Grow Nursery, Ongar Road, Pilgrims Hatch	CM15 9JH	20	0	18	38	2
023A & 23B	Land off Doddinghurst Road, either side of A12	CM15 9EY	30	0	170	200	15
034 / 235 / 087 / 276	Officer's Meadow, Alexander Lane / Chelmsford Road, Shenfield	CM13 1AG	90	20	400	510	37
263	Land east of Chelmsford Road, Shenfield	CM15 8SD	30	0	170	200	15
311	Eagle and Child Pub, Shenfield	CM15 8RG	6	14	0	20	1

158	Land north of A1023 Chelmsford Road, Shenfield	CM15 8SB	0	0	100	100	9
022	Land at Honeypot Lane, Brentwood	CM14 4QX	40	0	160	200	14
032	Land East of Nags Head Lane, Brentwood	CM14 5NL	10	10	105	125	10
081	Council Depot, The Drive, Warley	CM13 3BH	43	65	15	123	4
117A & 117B	Ford Headquarters, Warley	CM13 3BW	150	100	100	350	14
027	Land adjacent to Carmel, Mascalls Lane, Warley	CM14 5HX	0	0	9	9	1
079A	Land Adjacent to Ingatestone By-pass	CM4 0AL	0	16	41	57	4
128	Ingatestone Garden Centre, Roman Road	CM4 9AU	20	20	80	120	8
106	Site adjacent to Ingatestone Garden Centre (former A12 works site)	CM4 9AY	15	0	26	41	2
076	Land south of Redrose Lane, north of Orchard Piece, Blackmore	CM4 0SA	10	0	20	30	2
077	Land south of Redrose Lane, north of Orchard Piece, Blackmore	CM4 0QT	10	0	30	40	3
294	Chestnut Field, Blackmore Road	CM15 0DX	0	0	5	5	0
085B	Land adj Tipps Cross Community Hall, Blackmore Road	CM15 0DX	0	0	5	5	0
075B	Land off Stocks Lane, Kelvedon Hatch	CM15 0BN	5	0	25	30	2
194	Brizes Corner Field, Blackmore Road, Kelvedon Hatch	CM15 0AR	5	0	18	23	2
							463.0

Figure 8.5: Local Plan Housing Sites: Potential Early Years and Child Yield

Dunton Hills Employment Zone (200)	Pre-school Places Forecast (4 places per 100 employees)	Land adjacent to Ingatestone by-pass (part bounded by Roman Road) (079C)	Pre-school Places Forecast (4 places per 100 employees)	Childerditch Industrial Estate (112D and 112E (a))	Pre-school Places Forecast (4 places per 100 employees)	Brentwood Enterprise Park (Codham Hall Extension) (101C)	Pre-school Places Forecast (4 places per 100 employees)	Land at East Horndon (109 and 187)	Pre-school Places Forecast (4 places per 100 employees)	Land north of A1023, Shenfield	Pre-school Places Forecast (4 places per 100 employees)	Brentwood Enterprise Park (M25 Junction 29 works site)	Pre-school Places Forecast (4 places per 100 employees)
	38		17		23		2		30		12		97

Primary Schools

8.33 A collaborative approach has been undertaken with Essex County Council to understand the strategic implications of the Local Plan housing sites on new primary school provision using the latest available information.⁷ The key findings from this analysis are detailed below in Figure 8.6. It should be noted that these are forecasts only and the information is likely to change as further certainty over developments is obtained (including typology) and demographics are updated. The overall surplus / deficit takes into consideration new forecasting variables and predicted pupil yield.

Figure 8.6: Primary School Requirements

Primary Planning Group	Pupils from Housing	Overall Surplus / Deficit (new forecasting)	School Options	Site Requirements	Additional Requirements
Group 01 (Brentwood Town)	584	-2.1 form entry	Current planned expansion of Warley Primary by 1 form entry (fe) (Scheduled to open 2019). Additional new 2 form entry (fe) primary school also required – most significant pupil demand falls within Long Ridings Primary priority admissions areas. Option to pursue new primary school within Officer's Meadow development / area.	Minimum site requirement for new primary school = 2.1ha	New primary school to include 56 place early years and childcare facilities. Schedule to open school by 2024.
Group 02 (Ingatestone / Mountnessing)	49	-0.4 form entry	Prudent to plan for 0.5 fe expansion.	Exact site requirements to be confirmed.	Schedule to open extension by 2020.
Group 03 (Doddinghurst / Kelvedon Hatch)	42	-0.4 form entry	Prudent to plan for 0.5 fe expansion	Exact site requirements to be confirmed.	Schedule to open extension by 2021

⁷ Including currently unpublished forecasts and planning permission data to 31st March 2018.

No Group (West Horndon)	959	-4.8 form entry	Currently planned expansion of West Horndon Primary by 0.5 fe (scheduled to open in 2019) Three new 2 fe primary schools required as part of Dunton Hills Garden Village development. This will build sufficient capacity for accommodating demand to 3,500 and with further expansion options to accommodate demand to 4200 units.	Three sites of 2.1ha (minimum requirement)	Each new primary school to include 56 place early years and childcare facilities. Scheduled school openings – 2023, 2028 and 2033. Special Education Needs provision may also be required on Dunton Hills Garden Village.
Early Years			In addition to early years facilities attached to new primary schools, additional stand-alone settings are likely to be required.	Exact quantities and site requirements to be confirmed.	

Secondary Schools

- 8.34 Overall the proposed housing allocations in the Local Plan produce a secondary school pupil yield of circa 1,089 across the Borough, which is equivalent to 7.3 fe (150 pupils a form). In Figure 8.7, this is broken down broadly into the secondary priority admissions areas.⁸ The sites at West Horndon and the proposed Dunton Hills Garden Village have been shown under one heading. As with the primary school information, it should be noted that these are forecasts only and the information is likely to change as further certainty over developments is obtained (including typology) and demographics are updated. The overall surplus / deficit takes into consideration new forecasting variables and predicted pupil yield. It can be noted from the figure that there is a small excess demand for pupil places forecast at the Anglo European School

⁸ Excludes Brentwood Ursuline Convent High School as it serves a wide area with specific admission requirements.

and the total pupil yield arising from West Horndon / Dunton Hills equates to circa 4.3 fe (Dunton Hills tested at 3,500 dwelling level). The Brentwood / Shenfield secondary schools appear to cope with the level of growth proposed. On first assessment, the 4.3fe of need may struggle to gain the critical mass for a new secondary school, however with the proposed developments on the edge of Basildon this should generate around a further form of entry demand. It is also likely that a new secondary school will attract in other pupils already living in West Horndon and north of the A127. The findings indicate the need to plan for a new 900 form entry secondary school at Dunton Hills Garden Village.

Figure 8.7: Secondary School Requirements

Secondary Priority Admissions Area	Pupils from Housing	Overall Surplus / Deficit (new forecasting)	School Options	Site Requirements	Additional Requirements
Anglo European	33	-0.3 fe	<p>The school sets its own admission standards.</p> <p>There are options to manage any small forecast in any resultant additional need from local developments through bulge classes.</p> <p>Pupil space may be underestimated as the school is set to benefit shortly from a small quantity of s.106 funding.</p>	No new housing led space requirements identified.	None detailed.
Brentwood County High	174	+0.1 fe	Cope with level of proposed growth.	None detailed.	None detailed.
Brentwood Five Parishes / Becket Keys	28	+ 0.6 fe	Cope with level of proposed growth.	None detailed.	None detailed.
Shenfield High	213	0.0 fe	Cope with level of proposed growth.	None detailed.	None detailed.
St. Martin's	2	1.3 fe	Forecasts for St. Martin's can vary but little housing promoted with priority admissions	None detailed.	None detailed.

			area. Any deficit in need may be met through Basic Need rather than funding arising from development.		
West Horndon Total (West Horndon / Dunton Hills)	639	-4.3 fe	Pupils yield from Dunton Hills / West Horndon likely to yield the equivalent of 4.3 fe pupil demand. Additional local demand may be equivalent to minimum of 1 fe of need (Basildon extensions, existing pupils within West Horndon and potential demand north of A127). Prudent to plan on the basis of 6 fe (900 pupils) new secondary school.	7.9 ha (minimum requirement)	Schedule to open school 2026. Special educational needs provision may also be required on Dunton Hills Garden Village.

Special Education Needs

8.35 According to the Department for Education⁹, across all schools the number of pupils with special education needs has fallen to about 14.4%, with special educational needs classified as:

- Special Education Need Support – extra or different help from that provided as part of the school’s usual curriculum, and
- Statement of special educational needs or Education, Health and Care (EHC) Plan – a pupil has a statement or plan when a formal assessment has been made.

About 2.8% of the pupil population has a statement or EHC plan.

8.36 It is rational to forecast that a proportion of new pupils arising from new housing development may need special educational needs support. This could be delivered within both non-specialist and specialist schools depending upon the nature of the educational needs. In stakeholder discussions, the Endeavour School has explicitly indicated the need to support older pupils in education with specialists 6th form facilities. This position is supported by the specialist SEN team at ECC. Importantly

⁹ Department for Education / National Statistics – Special Educational Needs in England January 2016 – information to update.

there will also be a need to plan for primary and secondary school SEN provision as part of the Dunton Hills Garden Village. Discussions will also need to take place with West Horndon Primary school how also have a current specialism in SEN support.

FINANCIAL IMPLICATIONS

8.37 The indicative school infrastructure costs are detailed further in Part B of the IDP but are summarised below in Figure 8.8. Please note that these figures exclude land and site preparation costs.

Figure 8.8: Indicative School Infrastructure Costs

Area	Project	Cost	Notes
Brentwood / Shenfield (Grp 1)	Expand Warley Primary by 1fe	£1.9m	Funded by s.106 and Basic Need Funding
	New primary school	£7.5m	On Officer's Meadow subject to s.106 funding
Ingatstone & Mountnessing (Grp 2)	Additional 0.5 fe primary school capacity	£1.6m	Figures based upon standard 'expansion' multiplier of £15,281 per place
Doddinghurst / Kelvedon Hatch (Grp 3)	Minor expansion of primary school capacity	£535,000	Figures based upon standard 'expansion' multiplier of £15,281 per place
West Horndon (Grp 4)	Expand West Horndon Primary by 0.5 fe	£1.1m	Funded from Basic Needs Funding.
Dunton Hills Garden Village	3 x 2 fe primary schools	£22.5m	Allows for expansion up to 4200 houses.
	New 6 fe secondary school	£20.2m	Includes land but excludes costs of post 16 provision
Total		£55.34m	

09 SOCIAL AND COMMUNITY

To Insert

OVERVIEW

9.1 This chapter covers a wide range of services and facilities under the broad umbrella of 'social and community'. It is not an exhaustive list of topics but covers:

- social infrastructure, including voluntary and community sector (VCS) organisations and support organisations;
- social services directed at supporting adults, families and children, and
- community facilities – community centres, village halls, parish rooms / remembrance halls, libraries and cemeteries, graveyards and crematoria, and
- rural services and facilities.

The 'softer' side of infrastructure is often taken for granted or overlooked but is essential for successful communities. The NPPF places a strong focus upon community facilities and services including those for rural areas (para 83d and 84) and supporting healthy and safe communities (numerous references under section 8)

Social Infrastructure

9.2 Brentwood is fortunate in having a vibrant voluntary and community sector, which is supported by Brentwood CVS (BCVS) and other organisations. The CVS has over 100 members, with a full list of organisations available on its website.¹ The core activities of the BCVS include:

- Assisting new groups to set up including charity registration.
- Database of local groups – their aims and services/abilities they provide.
- Library information.
- Advice and information on fundraising. Grant finder is available to all groups to enable them to target appropriate Charitable Trusts, thereby increasing their chances of a successful funding application.
- Newslink – Bi-monthly newsletter offering group news, publicity, up-to-date changes in legislation, training, funding and voluntary opportunities.

¹ <http://www.brentwoodcvs.org.uk/category/members/>

- Representation. Through effective networking CVS is able to represent the views and concerns of the local voluntary organisations to other agencies.
- Training. CVS organises training programmes at a nominal cost to participants and can respond to recognised needs within the local voluntary sector.
- Volunteer recruitment. The CVS has information on the volunteer requirement of local groups.²

Volunteer opportunities are also provided through Volunteer Essex and the CVS is also promoting a local 'timebank', in which people and organisations 'deposit' in the bank by providing for example practical help and support to others and 'withdraw' support when they themselves are in need.

9.3 Brentwood Borough Council also has an active Volunteering Strategy³, which recognises the integral role volunteers play in our communities, by promoting and contributing to community cohesion and peoples' lives. Key aspects of the strategy include:

- Supporting the positive promotion of volunteering across the Borough by raising the profile of volunteers and volunteering involving organisations – action include launching a compact, working with Brentwood CVS on key projects and helping promoting local volunteering opportunities with local voluntary and community groups.
- Supporting Brentwood Borough Council staff to undertake volunteering opportunities.
- Ensuring that volunteers are an integral part of the Council's service delivery, including promoting volunteering across the Council and opportunities such as Countryside Volunteers, Environmental Action Days and community event stewarding.

9.4 The Brentwood Borough includes nine parish councils who play an active role in local affairs and supporting and delivering local facilities and services⁴. The Council has engaged in discussions with parish councils during the early formative stages of the Local Plan and IDP and key issues identified included⁵:

- pressures on local primary schools and health facilities;
- reductions and changes to bus transport;
- traffic speeds through villages, and
- loss of local shops.

² Information cited on BCVS website

³ Brentwood Borough Council Volunteering Strategy 2016-2019

⁴ Blackmore, Hook End & Wyatts Green, Doddinghurst, Herongate & Ingrave, Ingatestone & Fryerning, Kelvedon Hatch, Mountnessing, Navestock,, Stondon Massey, West Horndon

⁵ Reference event required

9.5 The local area is well served by churches, which are part of strong faith-based communities across Brentwood and beyond. Brentwood also has a relatively high number of faith-based schools, which are major components of the local community.

Social Services

9.6 The Care Act includes a legal duty to promote the integration of health and social care where the local authority considers that integration of services would either promote the wellbeing of adults with care and support needs (including carers), contribute to the prevention or delay of developing care needs, or improve the quality of care in the local authority's area. For the purposes of the Care Act, housing is considered a health-related service.

9.7 The demographic analysis as detailed in the Market Position Statement (MPS) on social care indicates that there is currently 286,600 older people living in Essex and that the population aged 65+ is projected to increase 25% to 357,400 by 2024. There is also likely to be a particular increase in the older age groups with a 22% increase in people 85-89 and a 33% increase predicted in people aged 90+. ⁶

9.8 The Key figures for the Brentwood Borough area are detailed below:

- 19% increase in the population aged 65+ from 2014 to 2025;
- 10% of older people affected by income deprivation;
- Just over 30% projected increase in the percentage of population growth aged 70-74;
- About 4,190 people over 65 years (27%) with care needs
- In 2014 there was approximately 1,230 people living with dementia in Brentwood, predicted to rise to 1,330 (8% increase from 2014) in 2019, 1,480 (20% increase from 2014) and 1,930 (57% increase from 2014).

9.9 In Brentwood, while the growth in the ageing population and potential challenges in delivering specialist support and care is important and forecast to grow considerably, the rates of growth are considered modest compared with many other parts of Essex. There are particular challenges in parts of Essex, such as Tendring, Castle Point and Maldon, which have historically had a large older population, particularly coastal areas which attract retirees.

9.10 The strategic and legislative framework for social care is set nationally with local strategies and initiatives developed to interpret national strategy and reflect local priorities. The Care Act 2014 has integrated the provision of social care and health services for the benefit of the client. Health and social care providers in Essex are increasingly seeking to join up their efforts into integrated pathways which provide a

⁶ NHS and Essex County Council – Shaping Futures Market Position Statement – Designing Services for the Future 2015-2025.

consistent service for citizens and make best use of resources. Essex County Council has appointed Integrated Commissioning Directors to work with each of the five local Clinical Commissioning Groups (CCGs) to join up services.

- 9.11 Essex County Council delivers a range of social services, which can broadly be broken down into care for children and adult social services. Key aspects of children’s social care include:
- Protecting vulnerable children, family advice and work relating to children placed in foster care, adoption services and residential accommodation.
 - Working with the Youth Offending Service to help young people in trouble with the law.
 - Providing practical and emotional support to young carers.
 - Supporting children and young people with disabilities.
 - Health and well-being services for children and young adults.
- 9.12 The Essex Children and Young People’s Strategic Plan outlines six overall ‘system’ objectives, which includes protecting the most vulnerable children and reducing the social, educational and health inequalities gaps.⁷ There is also a focus in the strategy on promoting more self-reliance in families and a subsequent reduction in reliance on the state. The final three objectives centre upon making the most of resources, assets and workforces.
- 9.13 Youth work in Essex is delivered through a range of informal learning and personal development services that fulfil a number of statutory obligations as well as providing personal development opportunities. Access to good quality youth services is vital in ensuring strong community cohesion and can ultimately contribute to the success of a development and the area’s economic well-being. The Service works mainly with young people between the ages of 13-19. It works alongside schools and other partners to:
- Provide access to advice and guidance;
 - Deliver targeted support to those at risk of not progressing;
 - Support volunteering and community development;
 - Provide access to personal and social development programmes;
 - Support young people to have a voice and active involvement in their communities.

Services are delivered from ‘youth hubs’, satellite centres, community buildings, mobile units and outdoor spaces where young people gather. Critical to the work is involving partners, particularly young people, who are fully involved in service design, delivery, governance and evaluation of our services.

⁷ Essex County Council - Children and Young People in Essex – Strategic Plan 2016 onwards

- 9.14 Personalisation is a top priority element of emerging markets for social care over the coming years and presents wide ranging opportunities for new service offers from infrastructure and technology, online home banking and accounting support, through to menus of care itself to ensure that service users and their carers can transparently buy and monitor their own packages of care and top up care as needed. Approximately 32,000 people receive social care services in Essex over the course of a year and at any one time 17,566 of those 32,000 were adults aged 65+ and this proportion is set to increase.
- 9.15 There is a significant link between areas of deprivation and the volumes of people accessing services – until the age of 65 – when the correlation (across the UK) becomes less significant and we can assume therefore more age group specific. Investment in early intervention and prevention of falls, for example, reduces the ongoing and lengthy cost of a hospital stay and aftercare. Prevention is a key focus for our service moving forward. Older children leaving care are a high-risk customer group. In earlier years, the average cost of an excluded child over a lifetime to society has been quantified as £638,511* and these children are at high risk of becoming dependent young offenders as they move out of care. The nationally predicted age spike (a decent quality of life beyond 80s/90s) in the population will appear in Essex. Whilst people are not coming into services any earlier, they are living (and hence staying) in need and in services for longer – real terms volume and general demand for social care will increase over the next 10 years.
- 9.16 With regards to adult social care, key work areas include:
- Cross-over services on health, safety and well-being.
 - Adult carer support.
 - Signposting for support on money, legal help, work and learning.
 - Care and health support in older age.
 - Blue badges

Community Facilities

- 9.17 Local facilities, such as parish, village and neighbourhood halls provide for a range of community and cultural activities, such as play groups, clubs, social activities and public meeting space. The Borough has a vibrant community arts sector, including over 70 organisations and societies who deliver high quality events throughout the year.
- 9.18 As noted above with regard to more rural areas, the NPPF also indicates that local plans should promote the retention and development of local services and community facilities in villages, such as local shops, meeting places, sports venues, cultural buildings, public houses and places of worship.

Rural Services and Facilities

- 9.19 Approximately 72% of Essex County is rural in nature⁸, with 89% of Brentwood Borough within London's Metropolitan Green Belt. Although the County is located within close proximity to London and is home to major motorway infrastructure, two airports (Stansted and Southend) and two international ports (Harwich and Tilbury), there are particular challenges to supporting the rural economy and local services, which are shared with many other rural parts of the UK.
- 9.20 In August 2015, the Department for Environment, Food and Rural Affairs published its 10-point plan for boosting productivity in rural areas.⁹ Key themes in the plan include supporting:
- extensive, fast and reliable broadband services;
 - high quality, widely available mobile communications;
 - modern transport connections;
 - access to high quality education and training;
 - expanded apprenticeships in rural areas;
 - enterprise zones in rural areas;
 - better regulation and improved planning for rural businesses;
 - more housing;
 - increased availability of affordable childcare, and
 - devolution of power
- 9.21 The Essex Rural Partnership was established in 2002 and brings together organisations in the public, private and voluntary sectors to co-ordinate action on the major economic, social and environmental issues facing rural Essex. The key aims of the partnership include:
- Prosperity – building a dynamic and sustainable rural economy, where businesses and communities are mutually supportive, and where all the aspects and benefits of rural Essex are actively promoted to encourage investment;
 - Well-being – to enable everyone in Essex to enjoy the rich and diverse environment, and support rural residents to live well and access health services when they need them;
 - Connection – to support the development of rural broadband and rural transport, while championing rural networks and facilities;

⁸ Essex Rural Partnership – Respecting our Past, Embracing our Future: A Strategy for Rural Essex (2016-2020)

⁹ Department for Environment and Rural Affairs – Towards a one nation economy: A 10 point plan for boosting productivity in rural areas – August 2015

- Innovation – to promote new approaches to service access and delivery for rural communities, with a focus on mobilising community assets.

9.22 The partnership has a strong record of progress and has been successful in securing membership of the Defra Rural and Farming Network; helping initiate LEADER funding activity in Essex; representing rural interests and hosting visits; the production of a woodland strategy and undertaking a county-wide audit of rural service provision.

9.23 A summary of the key partnership priorities for 2016-2020 are detailed below in Figure 9.1, together with infrastructure themes arising. From this figure, it can be noted that rural strategy issues are wide ranging and cut across a number of local plan and core infrastructure priorities.

Figure 9.1 Rural Strategy Priorities

Priority Reference	Detail	Local Plan Themes	Infrastructure Priorities
	Harnessing the potential of our rural economy		
1 a	We will continue to provide both support and challenge to the superfast broadband programme to help address inadequate broadband and mobile connectivity – in particular, we expect to see the Rural Challenge pilot looking to reach out to other parts in rural Essex	Social and Community Infrastructure / Economic Prosperity	Broadband and Mobile Telecommunications
1b	We have also become increasingly aware of the limited information that we have about our rural economy, and will be working with partners to address this, as we develop our new evidence material.	Economic Prosperity	
1c	We will seek to maximise the benefits of programmes and projects which encourage economic growth and job creation. We will also identify, support and where appropriate lead on, opportunities to bring forward new programmes to Essex.	Economic Prosperity	
1d	We will work with partners to remove barriers to diversification for land-based businesses.	Economic Prosperity	
1e	We will encourage use of redundant buildings, especially those with historic merit, and we will explore the potential for under-utilised and redundant buildings to be adapted to support rural development.	Economic Prosperity / Environmental Protection and Enhancement	Heritage
	Education and Skills for Life		
2a	We will engage with Government to ensure it delivers in Essex on its pledge to increase apprenticeships in rural areas to support food, farming and small tourism businesses, and support high quality apprenticeships in our communities.	Economic Prosperity	
2b	We will engage with local authorities and academy providers to ensure the long-term future of rural schools.	Social and Community Infrastructure	Education
	Farming for the Future		
3a	We will help to promote and develop a food and farming sector that is resilient to global commodity price fluctuations by creating a dynamic and forward looking business environment and infrastructure.	Sustainable Communities Economic Prosperity	

3b	We will support the food and farming sector to meet the challenges of climate change by exploring approaches that either protect against the negative impacts or enhance the positive aspects of climate change.	Sustainable Communities Environmental Protection and Enhancement / Physical Infrastructure / Green Infrastructure	Water and Drainage Green Corridors
3c	We will encourage developments that support and enhance the food supply chains across the county to help integrate local food production with the wider Essex population.	Sustainable Communities	Allotments
Attracting Visitors to Rural Essex			
4a	We will facilitate sustainable tourism development.	Economic Prosperity	
4b	We will work with Visit Essex and local partners to promote rural Essex, package the tourism offer and give it an identity.	Economic Prosperity	
4c	We will support the development of the England Coast Path in Essex.	Economic Prosperity	
Celebrating Our Culture and Heritage			
5a	We will continue to work with partners on creative approaches to ensuring our historic buildings remain at the heart of rural communities, for example, in the use of church spaces for community groups and shops.	Environmental Protection and Enhancement / Social and Community Infrastructure	Heritage
5b	We will develop closer links to national bodies to ensure their programmes are aware of and engaged with issues and opportunities in rural Essex.	Duty to Cooperate	
5c	We will assist in promoting our heritage to a wider audience.	Environmental Protection and Enhancement / Social and Community Infrastructure	Heritage
Securing a Place to Live			
6a	We believe that the shortage of affordable housing in rural areas can only be addressed if a range of housing types and tenures, including provision of housing for rent, can be made more widely available.	Sustainable Communities	
6b	We believe that provision of affordable housing should be guided by up to date evidence of local need and should prioritise meeting the needs of local residents.	Sustainable Communities	
6c	We recognise the importance of the Rural Housing Enabler service but in view of the changing strategic context would encourage providers that support the service to explore new approaches to delivering affordable homes.	Sustainable Communities	
Accessing the Services We Need			
7a	We will encourage the development of effective rural proofing processes for use by local service providers.	Duty to Co-operate	
7b	We will support initiatives that improve access to health care, support independent living and reduce isolation and loneliness in rural areas.	Social and Community Infrastructure	Health Outreach services Social Services
7c	We will encourage the development of innovative and sustainable transport solutions, which are responsive to the needs of dispersed rural populations.	Transport and Accessibility	Transport
7d	We will ensure that support is available to facilitate community enterprise and other	Economic Prosperity	Infrastructure Partnerships and Delivery

	initiatives that strengthen the provision of essential local services.		
7e	We will encourage non-commercial solutions to providing the transport that is necessary to reach essential and valued services.	Transport and Accessibility	Transport Infrastructure Partnerships and Delivery
	Thriving and Pro-active Communities		
8a	We will encourage initiatives that promote leadership from parish and town councils and local voluntary organisations.	Sustainable Communities	Infrastructure Partnerships and Delivery
8b	We will encourage the devolution of responsibilities to local communities in appropriate circumstances.	Sustainable Communities	Infrastructure Partnerships and Delivery
8c	We will promote the benefits of Neighbourhood Planning and other measures that give communities greater influence over their future development.	Sustainable Communities	Infrastructure Partnerships and Delivery
8d	We will support those who give of their time to keep community facilities available for those who live and work in rural areas.	Sustainable Communities	Infrastructure Partnerships and Delivery
8e	We will encourage de-regulation to reduce barriers to volunteering.	Sustainable Communities	Infrastructure Partnerships and Delivery
	Feeling Safe and Reducing Crime		
9a	We will encourage the Police and Crime Commissioner for Essex and Essex Police to support community safety initiatives that address the specific needs of rural communities and businesses.	Social and Community Infrastructure	Emergency Services
9b	We will support communities in taking local action to make their homes and environments safer.	Physical Infrastructure	Emergency Services
9c	We will support initiatives which bring benefits to rural areas.	Sustainable Communities	
9d	We will work with other partners to ensure our residents feel safe. This will include Essex Trading Standards and Essex Civil Protection and Emergency Management.	Social and Community Infrastructure	Emergency Services
	Protecting and Promoting Our Natural Environment		
10a	We will use our influence with Defra and DECC to ensure the voice of Landowners – as ‘custodians of our landscape’ is represented, and funding mechanisms do not have unintended impacts upon Rural Essex.	Environmental Protection and Enhancement	Ecological Assets Green Corridors
10b	We need to interact fully with organisations such as EPOA (Essex Planning Officers Association) and statutory bodies (e.g. Environment Agency and Natural England) and the local environmental bodies (like Essex Wildlife Trust, the National Trust and the RSPB) at a strategic/national level.	Duty to Co-operate	Infrastructure Partnerships and Delivery
10c	We need to ensure that the Essex Rural Partnership continues to be both ‘Champion’ of the rural economy, environment and society, extending our membership to those organisations/decision makers whose actions impact directly upon the environment.	Duty to Co-operate	Infrastructure Partnerships and Delivery
10d	We will support initiatives that record and protect the unique biodiversity found in rural Essex, and which enable this to add	Environmental Protection and Enhancement / Green Infrastructure	Ecological Assets

	value to tourism and benefit economic prosperity.		
10e	We will engage with Natural England and the designated Areas of Outstanding Natural Beauty (AONBs) in our county to ensure that ongoing boundary reviews are to the benefit of rural Essex.	Environmental Protection and Enhancement	

EXISTING INFRASTRUCTURE, GAPS AND PROGRAMMES

Social Infrastructure

- 9.24 The Brentwood CVS website provides an initial overview of the range of local groups, charities and organisations which are members of the CVS. Figure 9.2 below provides summary information and a basic classification of the organisations by type of activity. The range of organisations is only a small percentage of the overall social infrastructure - a full audit is outside the scope of this study.

Figure 9.2: Local Groups, Charities and Community Organisations

Organisation (by principal activity)	% of Total Memberships
Animal support	2%
Arts and Culture	7%
Disability Focused	24%
Education / Spiritual	7%
Health / Care	19%
Housing / Accommodation	5%
Sport	8%
Support / Advice	26%
Other	2%
Total	100%

Social Services

- 9.25 The key social services / facilities activities which operate within the Brentwood Borough area are listed below in Figure 9.3.

Figure 9.3: Social Services – Key Activities in Brentwood Borough

Type of Service / Facility	Activities	Locations
Family Support		
Larchwood Gardens Child and Family Wellbeing Hub	Integrated children and family services (health, care and support). Partners: ECC, Barnardo's and Virgin Care.	Larchwood Primary Larchwood Gardens Pilgrim's Hatch CM15 9NG
Young Carers Support	Young carers club for carers aged 8-19 years	Brentwood Crossroads 51 Tallon Road Hutton, Brentwood Essex CM13 1TG
Youth Services		
Local Youth Service	Offers a range of services for young people aged 13-19 (and up to 25 with additional learning needs). Also operates as a music venue with recording studio.	The Hermit, Shenfield Road, Brentwood, CM15 8AG

9.26 Information on senior housing within the Borough is summarised below in Figure 9.4 and has been obtained from the housing care website.¹⁰

Figure 9.4: Senior Housing within Brentwood Borough

Name of Accommodation	Broad Location	Types of Facilities	Management / Ownership	Tenure	Dwellings	Number of Rooms	Additional care Info
Almshouses	South Weald	Age exclusive housing	Management - Browne and Wingrave Almshouse Charities	Rent (social landlord)	12		
Ardtully Retirement Residence	Ingatestone	Care Home	Ownership - Amba Care Homes Group			18 single rooms and 4 shared rooms (22 en suite). 26 residents in total	Enhanced Sheltered / Extra Care / Close Care
Aspen Court	Brentwood	Age exclusive housing	Management - London & Quadrant Housing Trust	Rent (social landlord)	11		

¹⁰ <http://www.housingcare.org/residential-care-homes/area-2-brentwood.aspx>

Beech Spinney	Warley Hill	Retirement / sheltered housing	Managed by: Retirement Lease Housing Association	Leasehold	28		
Berman's Close	Hutton	Retirement / sheltered housing	Managed by: William Berman's Trust	Rent (social landlord)	12		
Bishops Hall / The Retreat	Brentwood	Retirement / sheltered housing	Managed by: Brentwood Borough Council	Rent (social landlord)	35		
Brentwood Care Centre	Pilgrims Hatch	Care Home, Care home with nursing	Owned by: Ranc Care Homes Ltd			112 single rooms (112 en suite)	Enhanced Sheltered / Extra Care / Close Care
Brickstock Furze	Shenfield	Retirement / sheltered housing	Managed by: HML Ashton Chater	Leasehold	20		
Brook field Close	Hutton	Retirement / sheltered housing	Managed by: Brentwood Borough Council	Rent (social landlord)	25		
Brook House Care Home	Brentwood	Care Home	Owned by: Larchwood Care			5 8 single and 6 shared rooms (64 ensuite) - 70 residents in total	Enhanced Sheltered / Extra Care / Close Care
Chichester House	Brentwood	Retirement / sheltered housing	Managed by: Brentwood Borough Council	Rent (social landlord)	41		
Danbury Close	Pilgrims Hatch	Retirement / sheltered housing	Managed by: Brentwood Borough Council	Rent (social landlord)	47		
Douglas Matthew House	Brentwood Town	Retirement / sheltered housing	Managed by: Anchor	Rent (social landlord)	69		
Dudbrook Hall	Kelvedon Common	Care Home	Owned by: St Michaels Homes			43 residents in 31 single and 3 shared rooms (18 en suite).	Enhanced Sheltered / Extra Care / Close Care

Harewood Road	Brentwood	Retirement / sheltered housing	Managed by: Brentwood Borough Council	Rent (social landlord)	50		
Hedgerows Nursing Home	Brentwood	Care home with nursing	Owned by: Outlook Care			36 residents	Enhanced Sheltered / Extra Care / Close care
Heron Court	Herongate	Care Home	Owned by: Runwood Homes plc			35 residents in 31 single and 2 shared rooms (18 en suite).	Enhanced Sheltered / Extra Care / Close care
Hibbard House	Brentwood	Age exclusive housing	Brentwood Housing Trust	Rent (social landlord)	6		
Homehurst House	Brentwood	Retirement / sheltered housing	Managed by: FirstPort	Leasehold	59		
Howie Cottages	Brentwood	Age exclusive housing	Managed by: Stonewater	Rent (social landlord)	4		
Hutton Village Care Home	Hutton	Care home with nursing	Owned by: BUPA Care Homes			40 residents in 40 single rooms (40 en suite).	Enhanced Sheltered / Extra Care / Close care
Ingleton House	Ingatestone & Fryerning	Retirement / sheltered housing	Managed by: Brentwood Borough Council	Rent (social landlord)	25		
Juniper Court and Coronation Cottages	Brentwood	Retirement / sheltered housing	Managed by: Brentwood Borough Council	Rent (social landlord)	30		
Leonard Lodge Care Home	Hutton	Care home with nursing	Owned by: Barchester Healthcare Ltd			60 residents in 60 single rooms (60 en suite)	Enhanced Sheltered / Extra Care / Close care
Montbazou Court	Brentwood	Extra care housing	Managed by: L&Q Living	Rent (social landlord)	26		
Old Shenfield Place	Shenfield	Care Home, Care home with nursing	Owned by: Amba Care Homes Group			31 residents in 21 single and 5 shared rooms (20 en suite).	Enhanced Sheltered / Extra Care / Close care

Primrose Court	Brentwood	Retirement / sheltered housing	Managed by: Orbit Housing Association	Leasehold	46		
Queenswood House	Brentwood	Retirement / sheltered housing	Managed by: Home Group Ltd	Leasehold	56		
Quennell Way	Hutton	Retirement / sheltered housing	Managed by: Brentwood Borough Council	Rent (social landlord)	29		
Ravenscourt	Brentwood	Retirement / sheltered housing	Managed by: Warwick Estates Property Management Ltd	Leasehold	46		
Roseberry Court	Hutton	Retirement / sheltered housing	Managed by: Genesis Housing Association	Rent (social landlord)	30		
Rowen Green	Brentwood	Retirement / sheltered housing	Managed by: Brentwood Borough Council	Rent (social landlord)	26		
Sawyers Court	Shenfield	Retirement / sheltered housing	Managed by: FirstPort	Leasehold	26		
Seton Unit	Warley	Care home	Sisters of Charity of St Vincent de Paul			8 residents in 8 single rooms (8 en suite)	Enhanced Sheltered / Extra Care / Close care
Seven Arches	Cornsland	Care home with nursing	Owned by: Brookvale Healthcare			30 residents in 30 single rooms (24 en suite).	Enhanced Sheltered / Extra Care / Close care
Signature The Beeches	Brentwood	Care home with nursing	Owned by: Signature Senior Lifestyle Limited			124 residents in 124 single rooms (124 en suite).	Enhanced Sheltered / Extra Care / Close care
Sir Francis Way	Kelvedon Hatch	Retirement / sheltered housing	Managed by: Brentwood Borough Council	Rent (social landlord)	9		

St. Georges Court	Brentwood	Retirement / sheltered housing / Extra care housing	Managed by: Brentwood Borough Council	Rent (social landlord)	55		Extra Care
St. Thomas Court	Brentwood	Retirement / sheltered housing	Managed by: Anchor	Rent (social landlord)	25		
Sycamore Court	Little Warley	Care home	Owned by: Holmes Care Group			39 residents in 39 single rooms (39 en suite).	Enhanced Sheltered / Close Care
Tara	Brentwood	Care home	Owned by: Mr & Mr Sookary			8 residents in 4 single and 3 shared rooms	Enhanced Sheltered / Extra Care / Close care
The Gables	Warley	Retirement / sheltered housing	Managed by: Brentwood Borough Council	Rent (social landlord)	38		
The Lawns	Warley	Retirement / sheltered housing	Managed by: Orbit Housing Association	Leasehold	44		
The Meads	Ingatestone & Fryerning	Retirement / sheltered housing	Managed by: Brentwood Borough Council	Rent (social landlord)	39		
The Squirrels Care Centre	Great Warley	Care home	Owned by: Larchwood Care			48 residents in 47 single and 1 shared rooms (44 en suite).	Enhanced Sheltered / Extra Care / Close Care
Victoria Court	Brentwood	Retirement / sheltered housing	Managed by: Brentwood Borough Council	Rent (social landlord)	35		
Winifred Dell House	Brentwood	Care home	Owned by: Excelcare			76 residents in 76 single rooms (76 en suite).	Enhanced Sheltered / Extra Care / Close Care
Total					1004		

Community Facilities

- 9.27 This section of the chapter provides baseline audit information on a wide range of community facilities, including community halls and centres, village halls, parish rooms / remembrance halls, libraries, cemeteries, graveyards and crematoria.
- 9.28 Brentwood Borough Council owns five community halls and has the head lease on one other facility. The six community halls are leased to Brentwood Leisure Trust (BLT). These are detailed below in Figure 9.5.

Figure 9.5: Community Halls¹¹

Community Hall	Description
Bishops Hall	An established community hall situated off Elizabeth Road, in Pilgrims Hatch, in a recently refurbished park. It can accommodate seated events for 100 - 130 people and 170 for discos. It has an adjacent garden area with car parking and parkland setting. It has a good-sized hall, kitchen facilities and plenty of toilets. It has been a target for Anti-Social Behaviour and vandalism. It is not an attractive building and anti-climb features add to this image.
Merrymeade House	An attractive building set in a central location in Brentwood Town Centre. It is mixed use with six seven rooms of varying sizes capable of accommodating from 20 - 40 people. A Buddhist Group is a tenant and operates a cafe on the premises. It is also shared by a housing association and residential lets so there needs to be care with any bookings to avoid noise issues. There is limited parking and Sawyers Hall has a number of schools which leads to peak time congestion in the immediate area. The tenants and limited size of accommodation do not allow for higher value social functions.
Hutton Poplars Hall	Set in Hutton Poplars, Hutton the historic building has 2 halls, a main hall with capacity for 150 seated and 200 standing and the Lansbury Suite for up to 60 people. Both are licensed for civil ceremonies and are popular for social events. Good parking, toilet facilities. Long standing and regular users including nursery. The historic nature of the building means that there are high maintenance costs.
Hutton Poplars Lodge	A small hall located in Hutton Poplars in Hutton with a maximum capacity of 40. It has an office, car parking and clubhouse/bar operated by a Bowling Club which uses the adjacent green in the summer. It is small and needs to be updated

¹¹ Information reproduced from 4 Global Study – Value for Money Review and Management Options Appraisal - Table 6.1 Summary of Community Halls – Feb 2017.

	and the use by the Bowling Club make it difficult to let.
Nightingale Centre	Purpose built venue located in Warley with a mixed-use hall for 100 - 130 people seated. It has a small kitchen, offices and car parking. The building is shared with SNAP who rent office space. It is busy and one of the more modern halls in the group. The shared car parking, and unauthorised commuter parking for Brentwood Station, limits availability of parking for hall users.
Willowbrook Hall	This was built within Willowbrook School in Hutton as a replacement for Hutton Parish Hall. Limited use was transferred from that venue. It has a capacity of 50-60 seated. The primary school site means that there are major operating restrictions and very limited parking. Willowbrook is owned by ECC and leased to BBC and then is sublet to BLT

9.29 In addition to the halls detailed above there is a community centre in Ingatestone (Ingatestone and Fryerning Community Club, 7 High Street, Ingatestone, CM4 9ED) and Hutton Community Centre, Harrison Close, Brentwood, CM13 1LP. Both facilities are well used by social / community groups.

9.30 In addition to the community halls and centres noted above, there is also a wide range of village halls, parish rooms and remembrance halls across the Borough. These are listed below in Figure 9.6.

Figure 9.6: Village Halls, Parish Rooms and Remembrance Halls

	Location	Type of Facility	Available for hire for the following activities / events
1	Blackmore, Hook End and Wyatts Green	Blackmore Village Hall, Nine Ashes Road	Wedding, Parties, Children's parties, Dinner Dances, Quiz nights Dance/fitness classe, adjoining sports and social club, outdoor facilities nearby
2	Doddinghurst	Doddinghurst Village Hall, Church Lane	Meetings, Private Events, Group Classes, Parties.
3	Herongate and Ingave	St Andrew's Church Hall, Herongate	Information not available
4	Ingatestone and Fryerning	Seymour Pavillion, New Road	Information not available
5	Kelvedon Hatch	Kelvedon Hatch Village Hall, School Road	Group Classes, Art Classes, Private Events

6	Mountnessing	Mountnessing Village Hall, Roman Road	Club meetings, wedding and other parties, dance classes and village activities
7	Navestock	Navestock Village Hall	Activities pertaining to village halls - clubs, wedding receptions, shows, local events, classes
8	Stondon Massey	Stondon Massey Village Hall, Ongar Road	The parish hall is maintained for use by local groups, clubs and individual hirers, which currently include, w.i, darts, art, pilates, dance, first responders, parish council and casual lettings for various purposes.
9	West Horndon	West Horndon Village Hall, Station Road	Dancing karate bridge keep fit friendship club under 5s play group art group baton twirlers l.a.y. womens w.i.
10	Shenfield	Shenfield Parish Hall, Hutton Road	the charity runs Shenfield parish hall for the benefit of the local community.
11	Brentwood	The Cathedral Parish Hall	Information not available
12	Brentwood	Willowbrook Hall, Brookfield Close	Conference, Meeting Rooms, Group Classes, Parties, Catering.
13	Hutton	Hutton Parish Hall, Rayleigh Road	w.i. table tennis history groups domino drives social evenings parties bridge exercise classes
14	Warley	Little Warley and Childerditch Village Hall, Magpie Lane	Raising funds to support the daily maintenance of the village hall for the benefit of the local community. organise events which is supported by the elderly, the disabled and local children who attend the kindergarten classes or may live in the village together with the villagers.
15	Pilgrims Hatch	Pilgrims Hatch Parish Room, Crow Green Road	Provides a small hall, heated and with toilet and kitchen facilities, for the use of small groups and clubs, and for private parties.
16	South Weald	South Weald Parish Hall, 85 London Road	Provides facilities for all ages in the brentwood , essex area. such facilities include fitness and dance classes,childrens groups, brownies, drama groups and childrens parties.

17	Tipps Cross	Tipps Cross Remembrance Hall	Activities include: pre-school, badminton, carpet bowls, aerobics, table tennis, croquet, senior citizens club, karate, childrens' dance ,disabled group post office, / pre school, table tennis, group classes
18	Brentwood	Willowbrook School Community Centre	Information not available
19	Brentwood	Knights Way Centre	Group Classes, Private Events

9.31 Brentwood Borough Council's Town Hall is currently undergoing a transformation to provide accessible office space for community and charitable organisations such as MIND and CAB, while the upper floor of the building is being converted into residential apartments. Essex Police located office functions to the Town hall in 2017.

9.32 The Library Service is statutory (1964 Public Libraries & Museums Act) and is required to provide a comprehensive and efficient service for all residents and persons working and studying in Essex. This statutory requirement is articulated by central Government through its inspection regime. Further information is found on the Department of Culture, Media and Sport website. The Library service has increasingly become a shared gateway to other services and also for accessing digital information and communications. The Library service reviews its community profiles for existing libraries on a regular basis.

9.33 Essex County Council is responsible for the network of libraries and mobile library services across the Borough. The main public libraries in the Borough are:

- Brentwood Library, New Road, Brentwood, CM14 4BP – open 5.5 days per week, the facility also features reading and story events for younger readers, various book groups (including an audio book group for blind and partially sighted people) and drop in sessions by Essex Sight for people who are blind or partially sighted.
- Ingatestone Library, High Street, Ingatestone, CM4 9EU – open 4 half days per week, the library also hosts events for younger readers, various book and reading groups, and a tea and talking books event.
- Shenfield Library, Hutton Road, Shenfield, Brentwood, CM15 8NJ – open 5 days per week and features events for younger readers, a 'knit and natter' group and various book groups.

9.34 The Borough is also served by a number of mobile library routes¹²:

¹² Information last reviewed 2017.

- Chelmsford Mobile Route Week 1 – Friday – Hutton, Ingrave, Brentwood, and
- Chelmsford Mobile Route Week 2 – Fortnightly visits Tuesday – Highwood, Tipps Cross, Hook End, Wyatts Green, Doddinghurst, Brentwood and Pilgrims Hatch.

9.35 Cemeteries, graveyards and crematoria is listed below in Figure 9.7. The table also includes some provisional information on whether the facility is closed or available for interments.

Figure 9.7: Cemeteries, Graveyards and Crematoria

London Road Cemetery	This cemetery is closed to new full interments (burials), only interments in pre-purchased grave spaces are accepted. There is a large area available for cremated remains interments. The chapel is not available for use.
Woodman Road Cemetery	Woodman Road Cemetery can accept both full burials and cremated remains interments. A small chapel is also available. *Please note that due to constant abuse, the toilets at Woodman Road Cemetery will only be available for use when funerals are taking place.
Lorne Road Cemetery, Warley	The oldest cemetery in the Borough and is now closed to full burials and has been given over to a nature reserve and is still open to visitors.
Essex Regiment Chapel, Clive Road, Brentwood	No information available.
St Mary's Churchyard, Hall Lane, Shenfield	No information available.
Herongate Wood - Green Burial Site, Billericay Road, Brentwood	Managed by in-house Funeral Directors, Adam & Greenwood. The facility offers a full range of services, both 'green' and traditional for burial, cremation or the burial of ashes. The facility currently has capacity to accept interments.
St. Mary the Virgin, Fryerning, Mill Green Road	No information available.
Priory Church of St Laurence, Church Street, Blackmore	No information available.
St Peters Church, Weald Road, Brentwood	No information available.
Bentley Crematorium and Cemetery, Ongar Road	Run by Dignity Funerals, Bentley Crematorium and Cemetery opened in October 2012 with a multi-faith chapel. The chapel can seat 100 mourners and is heated and air conditioned. For large congregations the waiting area can accommodate and additional 100 people standing. The crematorium also has access for the disabled, disabled toilets, a hearing loop and has a speaker system throughout the building. The facility currently has capacity to accept interments.
Pilgrims Hall, Christian Centre	No information available.
St. Edmund & Mary, Ingotstone Parish Church, High Street	No information available.

St. Mary the Virgin Parish Church, Hall Lane, Shenfield	No information available.
All Saints Church of England, Church Lane, Doddinghurst	Doddinghurst Parish Council manages the burial ground for the Village which is situated to the North West of All Saints Church. The Church's own burial grounds to the front and rear of the building are closed to new interments. The Burial Ground is managed as a "Lawned Cemetery" and the regulations relating to this type of Burial Ground are given below. The burial plots are double (depth) plots and the deed of grant is for 30 years. Following the meeting of the General Purpose Committee, held on 17th February 2014, it was agreed that a formal ashes lawn would be created alongside Ashes Plot 1, near the central pathway, (see burial ground layout), to enable residents to be able to scatter human ashes. The scattering of ashes is unrecorded and no fee applies. Expected to meet the needs of the village until 2025.
St Thomas of Canterbury Church, St. Thomas Road	No information available.
All Saints Church, Hutton Village	No information available.
St. Nicholas' Church, Church Road, Kelvedon Hatch	No information available.
St. Johns Mountnessing, Hall and Church, Old Church Lane, Padhams Green	No information available.
St. Nicholas Church, Brentwood Road, Ingrave, Brentwood	No information available.
St. Mary the Virgin, Great Warley Street, Brentwood	No information available.
St. Helens RC Cathedral, Ingrave Road	No information available
The Parish Church of Christ Church, Warley, Watley Hill, Brentwood	No information available
St Stephens Church, St. Stephen Close, Ingrave	No information available
All Saints & St. Faiths Church, Church Lane, Childerditch	No information available
St Georges's Church	No information available
Trinity Church, 49 Coxtie Green Road, Pilgrims Hatch	No information available
St Peter's Little Warley Church, Little Warley Hall Lane, Brentwood	No information available

The Gospel Hall	No information available
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IMPLICATIONS OF GROWTH

Dunton Hills Garden Village

9.36 Dunton Hills Garden Village is a unique opportunity to not only create a new settlement but also a new community. Much of the work of the Town and Country Planning Association (TCPA) has focused upon the need for garden towns / villages to establish and support a charitable trust or organisation to look after the development and its residents, funded through a service charge and potentially an endowment or set of income sustaining assets. Stewardship may include physical maintenance and improvement of the public realm, managing the public realm, and organising community activities.

9.37 The TCPA is explicit in stating that:

*‘The stewardship task goes beyond the management of green space to cover the broadest range of community assets, including the active and positive management of everything from arts provision to commercial estates and utility companies. Putting local people at the heart of this process can generate increased local support, creativity, and entrepreneurialism. For new garden villages of a smaller scale, approaches to stewardship may differ from that taken for a much larger community, and the economics make matters more challenging’.*¹³

Dunton Hills is likely to require ‘hard’ community facilities but also effective resourcing to support the growth of a new community and support its sustainability both economically and socially. Community capacity building could be supported initially by existing networks and community structures.

9.38 There are also options within the garden village as part of the wider community infrastructure to develop a new community orientated building. Further options analysis will need to be undertaken and this could include a multipurpose building with public facing services, such as medical facilities, as well as space for multi-faith activities, recreation and estates services. The feasibility and operational value of various models will need to be explored with stakeholders.

¹³ <https://www.tcpa.org.uk/>

Social Care

- 9.39 Statistics from the JSNA indicates that there are 90,500 older people with social care needs who live in Essex.¹⁴ This equates to 35% of the older population over 65 years. There is a projected 22.8% increase in older people with care needs over the next five years which is higher than the anticipated 19.2% increase for England. Basildon and Brentwood have a rate of older people above the Essex average known to social care. Furthermore, due to the collective increase in individuals 56 years and older there will be a subsequent increase in the demand for care and support services for a population that will often experience poor health, dementia or disability in these extra years of life. Individuals currently using such services report their satisfaction to be below the regional and national level.
- 9.40 The Essex County Council Market Position Statement **on xxx**, which is updated at regular intervals, provides a picture of the County in terms of demand, supply and opportunity for a range of specialist housing. Specific needs identified include:
- **Older people:** Data analysis tells us that there are approximately 5,000 Essex residents who meet the criteria to access specialist housing with care that is being provided as an affordable housing option. This figure increases only slightly over the next 5 years. A proportion of these 5,000 residents will be best served by a form of specialist housing with care.
 - **Working age adults with disabilities:** There is an identified shortfall of around 270 units of supported accommodation of various types across the County.
 - **Mental health:** There is a need for blocks of 12 or so flats, with an on-site office, in a number of areas. In addition, there is a need for move-on accommodation of self-contained flats in general needs accommodation.
 - **Vulnerable people:** Support is currently provided to a range of vulnerable groups such as women fleeing domestic violence; homeless single people and families, older people and people with substance misuse problems.
- 9.41 Engagement work with local schools (primary, secondary and special education needs) as part of the Dunton Hills Garden Village scheme has highlighted opportunities to provide specialist or supported living housing for young adults with special education needs, including autism and the benefits that better integration with local communities can make for families and carers and the young adults themselves. This could form part of a wider supportive urban design and housing framework within the site masterplan for Dunton Hills. The opportunities to provide specialist housing is however not unique to new settlement planning.

Working Across Generations

- 9.42 Essex County Council estimate¹⁵ that for every 20 dwellings there will be a young person needing some youth work provision. The minimum size of development requiring a bespoke

¹⁴ NHS Basildon and Brentwood CCG – Essex Council Council 'Integrated Joint Strategic Needs Assessment (JSNA) 2014

¹⁵ Information from Guide to Developer Contributions - ECC

youth centre or dedicated youth space (catering for approximately 60 young people) is around 1200 houses. The capital cost of such a facility is estimated at about £700,000.

- 9.43 Most youth provision is, however, delivered through flexible community spaces. The need for developer contributions, thereby, needs to be considered on a case by case basis and in partnership with other services that may be delivered out of multi-functional community hubs.
- 9.44 In addition to community buildings there are a number of low cost ‘big win’ facilities that can be provided as part of new development of various sizes. Examples include (at current costs):
- Multi Sports Arena or Multi Use Games Area (MUGA) - costing around £40,000;
 - A basic skate park - costing around £35,000;
 - Youth shelters - costing around £10,000.
- 9.45 There are also opportunities to focus upon innovation in the delivery of facilities and services across generations. Much has been made recently in the media and care and housing circles of linking pre-school provision with care homes / retirement homes and the positive values that can be created for all age ranges.

Community Facilities¹⁶

- 9.46 Library services continue to be under pressure, with £1.9m costs cut in 2011 through reduced library opening hours and changes to the mobile library service. In 2016, Essex County Council announced that it would be using libraries to register births, marriages and deaths. For the 2016/17 financial year, the Council further reduced library spending by £593,000 and aims to save a further £594,000 in 2017/18.¹⁷
- 9.47 The Essex guideline for a new stand-alone library is that it should serve a discrete community of at least 7,000 people - very few developments apart from Dunton Hills will demand a library for itself so there is likely to be a need to ‘pool’ contributions. Where the increase in projected population more than doubles an existing library catchment area, it is likely that a new facility or building will be required: Provision of this space could be as part of a shared community or educational facility for example – and would allow consideration to be made for varying scales of development.
- 9.48 **BBC community assets review**

¹⁶ Information from Guide to Developer’s Contributions ECC

¹⁷ http://www.echo-news.co.uk/news/14215601.Merging_services_is_part_of_Essex_County_Council_s_money_saving_plan/?ref=mr&lp=20

FINANCIAL IMPLICATIONS

9.49 The key financial considerations from this chapter are detailed within Part B of the IDP.

10 HEALTH



OVERVIEW

10.1 For the purposes of the IDP, health services consist of the following:

- General Practitioner (GP) services;
- hospitals;
- ambulance services;
- public health and community healthcare;
- dentists;
- pharmacies, and
- opticians.

Social care is discussed under Chapter 12 of the IDP. This chapter is mainly concerned with non-private health infrastructure, although it is recognised that the Borough is served by a range of private health facilities.

Public Health Profile

10.2 Public Health England produce a series of public health profiles through its research observatory, with the last profile for the Brentwood Borough being produced in 2015¹. From this profile it can be noted that the health of people in Brentwood is generally better than the England average, with life expectancy for both men and women higher than the England average. Figure 10.1 below provides a snapshot of some public health headlines.

Figure 11.1 Public Health Headlines

¹ <http://www.apho.org.uk/resource/item.aspx?RID=50445> Information and figures taken from this profile and <http://fingertips.phe.org.uk/profile/health-profiles/data#page/1/gid/3007000/pat/6/par/E12000006/ati/101/are/E07000068>

Compared with benchmark ● Better ● Similar ● Worse ● Lower ● Similar ● Higher ○ Not Compared * a note is attached to the value, hover over to see more details

Recent trends: i (in development) - Could not be calculated ↑ Increasing / Getting worse ↑ Increasing / Getting better ↓ Decreasing / Getting worse ↓ Decreasing / Getting better → No significant change ↑ Increasing ↓ Decreasing

[Export table as image](#)



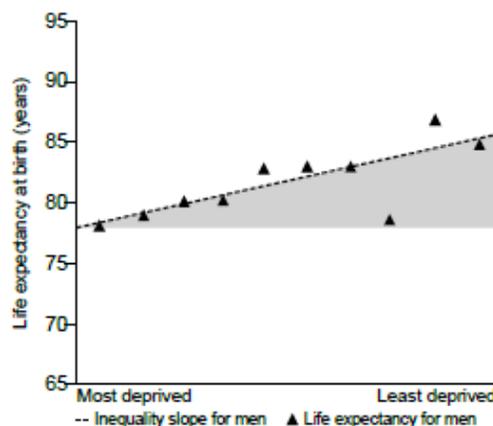
Indicator	Period	Brentwood			Region England		England			
		Recent Trend	Count	Value	Value	Value	Worst/Lowest	Range	Best/Highest	
Deprivation score (IMD 2015)	2015	-	-	9.9	-	21.8	42.0		5.0	
Children in low income families (under 16s)	2014	→	1,390	11.1%	16.5%	20.1%	39.2%		6.6%	
Statutory homelessness	2015/16	-	-	*	0.6*	0.9	-	Insufficient number of values for a spine chart		
GCSEs achieved (5A*-C inc. English & Maths)	2015/16	-	523	69.3%	57.9%	57.8%	44.8%		78.7%	
Violent crime (violence offences)	2015/16	↑	741	9.8	15.6	17.2	36.7		4.5	
Long term unemployment	2015	-	45	1.0	2.9	4.6	15.7		0.5	

10.3 It can be noted that deprivation is lower in Brentwood than the England average, however about 10.8% (almost 1,400) children as considered to live in low income families.

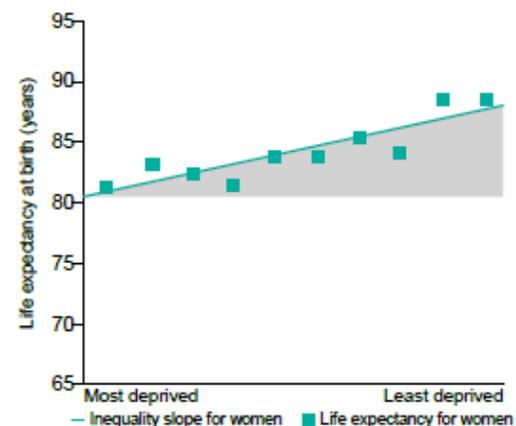
10.4 The life expectancy gap for men is 7.7 years between the most deprived areas or Brentwood and the least deprived. For women the gap is 7.5 years. This is illustrated below in Figure 10.2.

Figure 10.2 Life Expectancy

Life expectancy gap for men: 7.7 years



Life expectancy gap for women: 7.5 years



10.5 The rates of child and adult obesity is lower in Brentwood than the England average and the rates of alcohol-specific stays among under 18's and levels of teenage pregnancy are lower than the England averages. For adult health, the rates of self-

harm, smoking, sexually transmitted diseases, drug misuse, early deaths from cardiovascular disease and early deaths from cancer are all lower than the England average. The rates of physical activity of local people is also higher than the England average.

- 10.6 Local public health priorities include improving the health of older people, increasing vaccination coverage, and reducing cardiovascular disease by reducing the prevalence of obesity. Brentwood has a slightly higher proportion of over 65s compared to Essex county as a whole although a 17% increase is expected between 2015 and 2025 equating to 2,600 more people. This ageing population is likely to put greater demand on health, social care services and housing needs.²
- 10.7 Census data on general health also indicates a relatively positive picture of the Brentwood population. With higher proportion of people within Brentwood reporting very good health than the regional and England comparative percentages. At the other end of the spectrum the District also had lower levels of residents, as a percentage, reporting fair health, bad health and very bad health, than those across the region and England as a whole. This information is detailed below in Figure 10.3. Further detailed information on the health needs within the Basildon and Brentwood CCG area is available through the Integrated Joint Strategic Needs Assessment (JSNA) 2014.³

Figure 10.3: General Health

General Health (QS302EW)									
				Brentwood		East of England		England	
				Non-Metropolitan District	%	Region	%	Country	%
All Usual Residents	Count	Persons	Mar-11	73601		5846965		53012456	
Very Good Health	Count	Persons	Mar-11	37548	51.02	2761271	47.23	25005712	47.17
Good Health	Count	Persons	Mar-11	24537	33.34	2060157	35.24	18141457	34.22
Fair Health	Count	Persons	Mar-11	8565	11.64	752324	12.87	6954092	13.12
Bad Health	Count	Persons	Mar-11	2306	3.14	212830	3.64	2250446	4.25
Very Bad Health	Count	Persons	Mar-11	645	0.88	60383	1.03	660749	1.25
Total					100.02		100.01		100.01

² Information reproduced from Essex Local Authority Portraits – A Profile of People Living in Brentwood May 2016 Organisational Intelligence.

³ NHS Basildon and Brentwood CCG – Essex County Council 'Integrated Joint Strategic Needs Assessment (JSNA) 2014

National Planning Policy

- 10.8 The new NPPF places a strong emphasis upon the importance of supporting strong vibrant and healthy communities through the planning process and enabling and supporting healthy lifestyles, as well as the design of healthy places (para 8b, 91c and 122e). Strategic policies in local plans should make sufficient provision for community facilities, including health (para 20). There are also several linked public health themes in the NPPF connected with open space / greenspaces provision and minimising noise and air pollution.

NHS Five Year Forward View

- 10.9 Published in March 2017, the publication 'Next Steps on the NHS Five Year Forward View' sets out some of the key challenges / issues facing the NHS and how these are to be tackled over the short-term.⁴ These challenges include:

- We're getting healthier, but we're using the NHS more. Life expectancy has been rising by five hours a day, but the need for modern NHS care continues to grow. Demand for health care is highly geared to our growing and aging population. Demand is also heavily impacted by rising public expectations for convenient and personal care, the effectiveness of prevention and public health, and availability of social care. Even more significant is the steady expansion of new treatments and cures, of which the public are often unaware.
- The quality of NHS care is demonstrably improving, but we're becoming far more transparent about care gaps and mistakes. And although they are substantially lower than they were a decade ago, waiting times have been edging up.
- Staff numbers are up, but staff are under greater pressure.
- The public are highly satisfied with the NHS but are concerned for its future.

Clinical Commissioning Groups

- 10.10 As part of the changes to the NHS brought about by the Health and Social Care Act 2012 as from 1 April 2013, Basildon and Brentwood Clinical Commissioning Group (BBCCG) is now responsible for planning, designing and buying NHS services for the majority of people in Brentwood and Basildon. Part of the Brentwood Borough also has a surgery which reports to the Thurrock Clinical Commissioning Group (West Horndon). CCGs are responsible for planned hospital care, rehabilitation care, urgent and emergency care, most community health services and mental health and learning disability services.⁵ Sustainability and Transformation Plans (STPs) are being prepared for wider areas that incorporate several CCG areas. Draft STP's were, published in

⁴ <https://www.england.nhs.uk/wp-content/uploads/2017/03/NEXT-STEPS-ON-THE-NHS-FIVE-YEAR-FORWARD-VIEW.pdf>

⁵ Information reproduced from Basildon & Brentwood CCG Operational Plan 2016/17.

October 2016, summarising the work to date and outlining how system-wide plans can be delivered across organisations. The STP is an iterative document and will be reviewed periodically.

- 10.11 The BBCCG’s Operational Plan details the principal mission of the group, with a focus upon three main pillars – strengthening primary care, integrating care and ensuring sustainability of the local system. Figure 10.4 outlines the main themes in more detail.

Figure 10.4 Brentwood and Basildon CCG Mission Themes

<p>Strengthening Primary Care</p> <ul style="list-style-type: none"> • Ensuring effective collaboration between GP practices. • Aligning community health and social care teams around general practice. • Clinical leadership in preventing ill health and promoting wellbeing locally. • Ensuring explicit recognition by all providers of the lead role primary care play in coordinating the care of the registered population.
<p>Integrating Care</p> <ul style="list-style-type: none"> • Ensuring effective care coordination and care planning. • Establishing shared care records, utilising a single Personal Care Plan approach for the people of Basildon & Brentwood. • Focusing on preventative care and empowerment of individuals. • Harnessing the power of community resources to support resilience eg. social prescribing and carer support. • Encouraging pathways for smooth transfer of patient care from secondary care to primary care and vice versa.
<p>Ensuring Sustainability of the Local System</p> <ul style="list-style-type: none"> • Delivery of short- and longer-term financial sustainability. • Repatriation of patients into local providers. • Workforce strategies that address short- and longer-term needs of the system. • Effective use of estates across the care system (and beyond).

- 10.12 The BBCCG operating plan recognises the important role that General Practices (GP), play in local communities and as one of the cornerstones of the National Health Service (NHS). A key focus for the Operational Plan is to improve access to GP practice services through the expansion in capacity and provision of alternative consultation and care / support where appropriate. In practical terms, this translates to:
- Expanding the times that routine GP services are available.
 - Expanding the ways in which primary medical advice can be accessed.
 - Increasing access to alternative forms of community support which can appropriately divert demand from GP practices, and
 - Supporting the recruitment and retention of GPs and Practice Nurses.

- 10.13 NHS England and the Basildon and Brentwood CCG are working together to help plan and develop new ways of working within primary care facilities, in line with the BBCCG's Five Year Forward View plan⁶, to increase capacity in ways other than physical space. NHS England is also seeking to develop sustainable solutions through proactive coordinated care, including hubs, rather than the individual replacement of surgeries. There is also a significant focus upon premises for training and increasing capacity through technology.
- 10.14 Primary care transformation is also one of the key themes in the current Thurrock CCG Operating Plan.⁷ During 2015/16 Thurrock had a number of quality issues with regards to primary care, with several practices receiving poor Care Quality Commission ratings. Major concerns have focused upon the Tilbury area, which has a very low number of GP's per head of population. The CCG has been working with NHS England to transform primary care in the area to include:
- Developed four primary care health hubs which are helping to deliver 7 day a week primary care access to patients.
 - Developed a new IT system to improve booking into the new health hubs.
 - Supported NHS England to re-procure a number of practices where GPs have retired.
 - Developed a Joint Strategic Needs Assessment (JSNA) for Tilbury and Purfleet (Grays and Corringham to follow) incorporating all elements of health care including mental health.
 - Begun planning with Thurrock Council to build two new primary care healthy living centres.
 - Following a consultation, decommissioned the walk in centre in Grays because it was not offering an equitable service to the Thurrock population.
 - Developed a CCG primary care development team to focus on quality and governance support to practices in preparation for the forthcoming Locally Enhanced Services - Any Qualified Provider (AQP) process.

Primary Care Services

- 10.15 The Primary Care Strategies of the CCG's focus on the following key areas:
- General Practice to be provided at scale aligned to defined neighbourhoods;
 - the creation of a neighbourhood multi-disciplinary primary care workforce embedded in the Care Closer to Home model of care. This will provide

⁶ BBCCG 'Transforming health and care outcomes for the people of Basildon and Brentwood – Our 5 Year Strategic Plan

⁷ NHS Thurrock Clinical Commissioning Group Operational Plan 2016-17.

General Practice that is fully integrated; including the local authority and voluntary sectors;

- improved use of technology in General Practice;
- improved quality of care and safety of General Practice;
- increased patient access to fit for purpose estate suitable for the delivery of modern General Practice;
- supporting the development of a resilient General Practice workforce, and
- improved GP Training Facilities

10.16 A particular focus of the STPs is bringing simple diagnostics into communities. The CCG is also looking at more prevention-based and integrated service provision with social care. This growing focus on bringing care provision into the community may see the creation of health care 'hubs'/networks. To facilitate these strategies there will be a requirement to invest in infrastructure, which may include the need to deliver new facilities.

10.17 There are also STP priorities related to increased use of technology including, but not limited to:

- enabling patients and citizens to receive the care and support they need to live healthier, happier lives outside of a care setting;
- providing the information and tools to allow the local population to take responsibility for their own health and wellbeing;
- supporting professionals in delivering care with digital capability must enhancing working lives, not adding unnecessary challenges, and
- delivering the technology solutions to operate in an efficient and cost-effective way which supports continued high performance and future sustainability.

Local Hospitals

10.18 Correspondence from Basildon and Thurrock University Hospitals NHS has detailed that the regulators NHS Improvement has given permission for the proposals to merge the trust with the two further trusts which run Broomfield and Southend Hospitals. The current aim is to have a single NHS organisation by mid-2019. All three hospitals will continue to provide outpatient appointments, children's services and day surgery. All three hospitals will also provide 24/7 A&E and maternity services. There will be no reduction in beds, frontline staffing or in the overall budget.

10.19 In line with Primary Care Strategies and shifting care closer to home where possible, it is envisaged that the impact on the acute sector will culminate in the greater complexity of health needs of patients presenting in the acute sector. Hospitals will need to be redesigned to treat the patients of the future, with specific redesign based upon:

- greater community-based care for less acute patients;
- ageing population;

- hospital facilities which maximise the potential to treat the most-needy in the most efficient manner possible, centralising services and maximising economies of scale;
- greater treat and discharge models of care, linking to increased community and social care provision;
- move to designated day-case and ambulatory models of care and settings;
- increased health needs/acuity of those patients presenting in the acute sector;
- provision of the transfer of patients to less acute settings as soon as clinically appropriate, providing patients with care closer to home as soon as possible;
- the centralisation of support functions and services, such as Pharmacy, enabling the greater provision of community healthcare whilst maintaining the most acute patient care within the acute setting, and
- return of patients from specialist centres outside the local area back to local services as soon as appropriate.

Ambulance Services⁸

10.20 The East of England Ambulance Service NHS Trust (EEAST) Estates Strategy (2017-2022) indicates that a range of national initiatives are underway aimed at improving performance and sustainability within the NHS. There is widespread agreement from the stakeholders sponsoring these initiatives about the changes required within ambulance services and across the wider urgent and emergency system. Addressing these changes requires the Trust to develop revised operating models and strategies for all aspects of its services, including operational support services such as the Estates Service.

Public Health Services

10.21 Responsibility for public health was moved out of the NHS into local government in April 2013. Health and Wellbeing Boards (HWBs) promote co-operation from leaders in the health and social care system to improve the health and wellbeing of their local population and reduce health inequalities. HWBs are responsible for producing a Joint Health & Wellbeing Strategies (JHWS), Joint Strategic Needs Assessments (JSNA) and Pharmaceutical Needs Assessments (PNA) for the Basildon borough area.

10.22 Public health services are commissioned by Essex County Council in partnership with the respective local authorities. These services are primarily focused on prevention and early intervention, specifically developing measures that help to reduce illness and to tackle the causes of poor health at source. This includes initiatives to increase activity and healthy living, such as cycling and walking, as well as provision of green space within developments. The strategic overview of the STPs includes consideration of these issues.

⁸ Information on ambulance services and public health adapted from IDP submission by the Community Health Partnership.

- 10.23 Priorities for Public Health within spatial planning include supporting access to quality open and green/blue space, healthy diets including improving access to local and fresh food, improving community cohesion and reducing social isolation, supporting air quality, increasing active living through movement and play across all ages and supporting good quality housing design across the life course. Reducing health inequalities underpins our work.
- 10.24 Local data on Public Health is published annually by a number of national organisations including Public Health England and the NHS. This includes the local Health Profiles and the Public Health Outcomes Framework. Assessment of Public Health and Wellbeing need will be supported by the Health Impact Assessment processes, local evidence base and current Public Health Policy.

EXISTING INFRASTRUCTURE, GAPS AND PROGRAMMES

General Practice – Infrastructure, Gaps and Programmes

- 10.25 There are ten GP Surgeries (eight main surgeries and two branch surgeries) covering Brentwood Borough, which are detailed below in Figure 10.5 and **Figure 10.6**. Historically, the optimum number of patients per GP was 1,750. Using a simple calculation it can be noted that a number of the surgeries are operating at figures beyond the optimum number of patients per GP. These are highlighted in blue.

Figure 10.5: GP Practices

GP	Postcode	GP Code	Operational Details ⁹	Weighted Patient List Size (01/10/17)	NIA (m2)
Beechwood Surgery, Pastoral Way, Warley, Brentwood, Essex,	CM14 5WF	F81023	Larger 6 GP practice.	10730	968
Brambles Branch Surgery, Geary Drive, Brentwood	CM14 4FZ	F81085	From 1st October 2013 - The New Surgery has taken over Brambles Surgery and this will be utilised as a branch surgery. Patients previously registered with Brambles Surgery, as well as patients from The New Surgery may access medical care at this Branch. When the Brambles Branch Surgery is closed all patients should contact the main surgery in Shenfield Road 01277 218393 to access medical care or to	13020	115.9

⁹ This information does not include Full Time Equivalent (FTE) roles.

			register with the practice. (3 GPs)		
Rockleigh Court Surgery, 136 Hutton Road Shenfield Brentwood Essex	CM15 8NN	F81102	4 GP practice	6143	161
The Highwood Surgery, Geary Drive, Brentwood, Essex	CM15 9DY	F81737	1 GP practice	2189	148
Deal Tree Health Centre Blackmore Road Doddinghurst Brentwood Essex	CM15 OHU	F81215	4 GP practice	9898	784
The New Folly Surgery :Bell Mead Ingatestone Essex	CM4 0FA	F81163	4 GP practice	6573	243
Mount Avenue Surgery Address:Mount Avenue Shenfield Brentwood Essex	CM13 2NL	F81055	Larger 7 GP practice.	11870	438
The New Surgery Address:8 Shenfield Road Brentwood Essex	CM15 8AB	F81085	Larger 8 GP practice	13020	592.8
Tile House Surgery Address:The Tile House, 33 Shenfield Road Brentwood Essex	CM15 8AQ	F81038	Larger 7 GP practice	13303	555
West Horndon Surgery, 129 Station Rd, West Horndon, Brentwood CM13 3NB	CM13 3NB	F81134	4 GP practice (also linked to Peartree Surgery)	n/a	n/a

Figure 10.6 GP Practices Across the Borough

To Insert

- 10.26 There are currently no particular ‘gaps’ in the front-end GP services identified, although it is noted that a number of practices are potentially under pressure in terms of patient numbers. This situation is not unique to Brentwood, but is part of the wider challenges facing the NHS. It was also a strong feedback theme from local residents during consultation on earlier stages of the Local Plan. A number of the practices are also physical constrained, which makes the delivery of current services challenging – this is a particular issue in discussions with West Horndon Surgery.
- 10.27 The BBCCG has indicated that there is potential a need to ensure that supporting physical infrastructure such as superfast broadband / fibre optics and public transport connectivity is good to ensure that they can deliver healthcare services to patients through a range of media and that services are accessible to all.
- 10.28 At the local level the main improvements in health infrastructure provision within the Brentwood Borough are focused upon:
- adding depth and range to existing GP services, by building upon local expertise, collaboration between practices and combined learning;
 - providing patients with wider access to health information and services through media and on-line resources;
 - better aligning community health and social care;
 - maximising opportunities to develop Brentwood Community Hospital in terms of the range of services and specialisms.

These improvements are central to BBCCG ambitions for the Brentwood area. West Horndon Surgery has also expressed a need to move to larger premises which are better suited to delivering modern healthcare services. This requirement is linked to current need.

Hospitals and Acute Care – Infrastructure, Gaps and Programmes

- 10.29 The Basildon and Thurrock University Hospitals NHS Foundation Trust (BTUH) currently serves the Brentwood area and provides a range of health services including:
- an extensive range of acute medical services at Basildon University Hospital, including accident and emergency services and the Essex Cardiothoracic Centre
 - outpatients, diagnostics and a day surgery unit at Orsett Hospital (Orsett also houses a minor-injuries unit), and

- diagnostic services (x-ray and phlebotomy) at the St. Andrew's Centre, Billericay.

10.30 The Queens Hospital in Romford is also within relatively close distance of the Brentwood Borough and the North-East London NHS Foundation Trust and Southend University Hospital NHS Foundation Trust provide a range of specialist patient services at Brentwood Community Hospital. Surrounding main acute hospitals also include Southend, Broomfield and Harlow. Two large community hospitals serve the area, Brentwood Community Hospital and Mayflower Community Hospital (Billericay).

10.31 It is noted earlier in the chapter that NHS Improvement has given permission for the proposals to merge with the BTUH trust with the two trusts which run Broomfield and Southend Hospitals. Further to this announcement, the following recommendations are likely to progress:

- Basildon, Broomfield and Southend hospitals will continue to provide the services our patients use the most, including full A&E and maternity services.
- There will be a move to separate planned surgery from unplanned surgery to reduce delays and cancellations for patients and;
- Some specialist services will be consolidated to improve the outcomes for patients.
- Orsett Hospital will close when four integrated medical centres are in place for staff and services.

It is considered that this programme will unlock over £100m of additional funding to invest in new buildings and facilities. Attention will also focus upon improving bus infrastructure between the various hospitals and medical facility sites.

10.32 Within the Borough there is one community hospital located at Crescent Drive, Shenfield, which provides a range of services, including:

- cardiology;
- child health care services;
- COPD services;
- dermatology;
- ear, nose and throat;
- epilepsy;
- general medicine;
- mobility and falls service;
- nephrology;
- Parkinson's disease services;
- physiotherapy

- sexual health services
- stroke services
- tissue viability services
- urology

The services at the hospital are delivered by a number of Foundation Trusts, plus Connect Health.

- 10.33 There is an ongoing programme to improve the utilisation of Brentwood Community Hospital, to reduce the void costs associated with the building and making better use of the opportunity for providing a significant range of health and care services to the local population and beyond.

Ambulance Services – Infrastructure, Gaps and Programmes

- 10.34 The East of England Ambulance Service NHS Trust (EEAST) Estates Strategy (2017-2022) proposes the following estate transformation strategy:
- configuration of the estate as necessary to meet a vision to provide cost effective and efficient premises of the right size, location and condition to support the delivery of clinical care to the community served by the Trust;
 - a resulting regional estate configuration which consists of: network of 18 ambulance ‘hubs’, and
 - each ‘hub’ will support a ‘cluster’ of community ambulance stations, tailored to meet service delivery and patient response specific to their local area.

Dentists – Infrastructure, Gaps and Programmes

- 10.35 Within the Brentwood Borough area there are 8 dentist practices and one specialist Orthodontic Centre. Six of the dentist practices currently accept NHS patients.¹⁰ Figure 10.6 below provides a list of the dentists, operational details and feedback on waiting lists. From a telephone survey it is clear that there is still some existing capacity within the Brentwood Borough with regards to Dentists accepting NHS patients.

Figure 10.6 Brentwood Borough - Dental and Orthodontic Surgeries

	Dental Surgeries (10)	Operational Details	Patients per Dentist /Waiting List (24/10/16)
1	Herongate Dental Practice 152 Brentwood Road Herongate	3 dentist practice	No waiting list / accepting NHS patients

¹⁰ This information was collected in October 2016 and there is a need to update on a refresh of the IDP.

	Brentwood Essex CM13 3PD, 01277 810239		
2	Homewood Dental Practice 21 Shenfield Road Brentwood Essex CM15 8AG, 01277 220147	large practice - 11 dentists	Waiting list - approximately 3 weeks - 20/25 on waiting list / Accept NHS patients
3	SHAH NM MR Brentwood Orthodontic Centre 17 Shenfield Road BRENTWOOD Essex CM15 8AG, 01277 848818	2 orthodontists plus numerous other staff	Could not get through on phone / specialist services
4	Family Dental Practice 2 South Street Brentwood CM14 4BJ, 01277 233282	2 dentist practice	No waiting list / accepting NHS patients
5	Ongar Road Dental Practice 16 Ongar Road Brentwood Essex CM15 9AX, 01277 848777	large practice - 8 dentists / ortho	No waiting list / accepting NHS patients
6	Crown Street Dental Group Old Kings Yard 16a Crown street Brentwood CM14 4BA, 01277 221014	2 General Dentists / 2 Specialist dentists / 1 Implant Specialist	No waiting list / Not accepting NHS patients

7	Hutton Village Dental Surgery / / Hutton Village Dental Coram Green	7 dentists / professional staff	1 practice for private patients / 1 practice for NHS patients. No waiting list for NHS services
8	Coram Green Hutton Essex CM13 1LR, 0844 815 1015		
9	John Cuddigan and Associates 163 High Street Brentwood Essex CM14 4SD, 01277 210213	3 dentists	No waiting list / accepting NHS patients

Pharmacies – Infrastructure, Gaps and Programmes

- 10.36 There are thirteen pharmacies in Brentwood, one of which holds a 100 hour contract. All pharmacies are open from 9:00am to 17:30pm Monday to Friday (with the exception of one afternoon closure). Five pharmacies open earlier, with the earliest opening time 07:00am. Two pharmacies are open beyond 18:30pm, with the latest closure at 22:00pm.
- 10.37 Saturday service in the district is slightly reduced, however all except one pharmacy are open at some time during the day. Two pharmacies are only open in the morning, the remainder offer afternoon service provision until at least 16:00pm. The latest closing time is 22:00pm. Earliest opening hours on a Saturday is 07:00am. Three pharmacies open on Sunday, two between 10:00am and 16:00pm, and the other open from 09:00am until 21:00pm.
- 10.38 There were no pharmacies within Brentwood that administered disease specific medicine management, but the majority are willing to provide. There were also limited screening services provided. Several provided seasonal vaccinations, care home services and a medication review service. 12 pharmacies provide MURs, considered a relevant service by the PNA.
- 10.39 Figures 10.7 and 10.8 below provides information on pharmacy service provision within the Brentwood Borough area. The core information contained in this section has been extracted from the Essex Pharmaceutical Needs Assessment (PNA) – Basildon and Brentwood (2015).¹¹

¹¹ <https://www.essexinsight.org.uk/Resource.aspx?ResourceID=1094&cookieCheck=true&JScript=1> – further update may be available.

Figure 10.7: Pharmacies – Overview of Services

Pharmacy Name	Address	Supervised Consumption (ECC)	Needle and Syringe (ECC)	Sexual Health (ECC)	Smoking Cessation (Lead Provider)	NHS Health Checks (ECC)	MURS (NHSE)	Specific Type
Boots UK Limited	51 High Street, Brentwood, CM14 4RH	Yes		Yes	Yes		Yes	
Burntwood Pharmacy	27 Shenfield Rd, Brentwood, CM15 8AG			Yes	Yes		Yes	
Cohen's Pharmacy	138 Hutton Road, Brentwood, CM15 8NL	Yes					Yes	
Day Lewis Pharmacy	Pastoral Way, Brentwood, CM14 5WF				Yes		Yes	
Ingrave Pharmacy	21 E.Ham Crescent, B'wood, CM13 2BN	Yes		Yes	Yes		Yes	
Ongar Road Pharmacy	249 Ongar Road, Brentwood, CM15 9DZ	Yes	Yes		Yes		Yes	
Pharmchoice Pharmacy	9 Ingrave Road, Brentwood, CM15 8AP	Yes			Yes			HH
Rowlands Pharmacy	222 Hutton Road, Shenfield, CM15 8PA			Yes	Yes		Yes	
Sainsburys Pharmacy	51 W. Hunter Way, B'wood, CM14 4WQ						Yes	
Shadforth Pharmaceutical	80 High Street, Ingatestone, CM4 9DW			Yes	Yes		Yes	
The Co-operative Pharmacy	201 Rayleigh Road, Hutton, CM13 1LZ	Yes	Yes				Yes	
The New Pharmacy	33a High Street, Brentwood, CM14 4RG			Yes	Yes		Yes	
Village Pharmacy	86 Church Ln, Doddinghurst, CM15 ONG	Yes		Yes	Yes		Yes	

Figure 10.8: Locally Commissioned Pharmacy Services in Brentwood

Brentwood Service	Service description	Current provision	Gaps
Needle syringe provision- a relevant service	The aim of the needle exchange service is to minimise harm associated with the use of injecting equipment by drug users. The service provides clean injecting equipment and takes in used equipment for safe disposal. The service also provides an opportunity to signpost users to treatment services and to convey health promoting messages.	Two pharmacies provide needle & syringe provision, with others willing to provide with training. Pharmacies provide important access during evenings and weekends.	No gaps are identified. The two pharmacies in the area provide adequate provision. There is provision at weekends providing valuable access. There is further access to provision from the wider treatment system during weekdays

Supervised Consumption- a <i>necessary</i> service	The aims of the supervised consumption service are to provide support to drug users in treatment and assurance to drug treatment teams about compliance with prescribed treatment. The pharmacist supervises, often daily, the taking of drug treatment by patients in the pharmacy. The service is part of the national framework for drug treatment services.	7 pharmacies provide the service. There is good provision in terms of opening hours across these pharmacies. It performs a crucial role in the treatment system ensuring compliance with treatment and reducing possible diversion into the community.	No gaps are identified.
Sexual health services- a <i>relevant</i> service	The aim of the EHC service is to provide a safe and accessible route for women wishing to obtain emergency contraception. It forms part of the outcome for avoiding unwanted pregnancy and reducing teenage pregnancy. The aim of the Chlamydia screening service is to promote screening for Chlamydia and to provide advice and signposting to services for at risk people. The service allows pharmacies to offer the option of a Chlamydia test to the target population and to offer treatment if the test is positive.	7 pharmacies offer sexual health services There is provision from the wider treatment system, however, pharmacies provide important walk in access during evenings and weekends.	No gaps are identified.
Stop Smoking Services- a <i>relevant</i> service	Stop Smoking Services includes the provision of advice on stopping smoking and supply of nicotine replacement therapy (NRT). A key differentiator of pharmacy stop smoking services from other providers is the ability to supply medicines at the point of care. Pharmacies are seen as key providers of stop smoking services due to their opening hours, accessibility and ability to advice and supply NRT. Stopping smoking is the single most effective health care intervention that can be made. Community pharmacy contractors also sell a broad range of over the counter NRT which can be used by smokers intending to stop smoking to manage their own quit attempt.	10 of the pharmacies currently offer smoking cessation services. There is provision from the wider treatment system, however, pharmacies provide important walk in access and provision of NRT at point of care during normal and extended evening and weekend hours.	No gaps are identified.
NHS Health Checks- a <i>relevant</i> service	The aim of the service is to deliver NHS Health Checks from community pharmacies in Essex in areas where the	None of the pharmacies provide this service. It is widely provided by GPs and	No gaps are identified.

	GP does not wish to provide the service to their local population. It is an important service in identifying early onset of certain long term conditions.	community providers in the area.	
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10.40 From the resident survey conducted for the PNA, 84% stated that they have not experienced any problems accessing their usual pharmacy or dispensing doctor. The provision of necessary and relevant pharmaceutical services in the locality is considered to be adequate and no gaps have been identified at different times of the day. Locally commissioned services from local authorities and CCGs fall outside the definition of enhanced services; they have no bearing on pharmacy applications.

Opticians – Infrastructure, Gaps and Programmes

10.41 At the time of surveying, there were six main opticians in the Brentwood Borough area and one specialist optometrist.

- Specsavers Opticians – 22 High Street, Brentwood
- Templeman Opticians – 131 High Street, Brentwood
- Edward Watts Opticians – 14, Chelmsford Road, Shenfield
- Boots – 15 and 36-38 High Street, Brentwood
- Scrivens Opticians, Baytree Centre
- Vision Express, 26a, High Street, Brentwood
- Cole, Martin and Tregaskis Optometrist

No identified gaps in provision or new programmes have been identified.

IMPLICATIONS OF GROWTH

General Practices

10.42 Feedback from NHS England on infrastructure planning generally indicates that it is NHS policy locally is to attempt to accommodate growth wherever possible within the current premises envelope, though this is likely to require capital works to adapt facilities over time, and only to seek new premises where this is demonstrably necessary.

10.43 It has been indicated from NHS England that the anticipated impact from Local Plan sites will necessitate planning contributions across the Borough towards increasing capacity for local primary care facilities, by means of extension, reconfiguration or

refurbishment. It is also indicated that the proposed growth in the Brentwood Borough may require the provision of new health care infrastructure.

- 10.44 In relation to Dunton Hills Garden Village and West Horndon, EIA assessment feedback on the emerging planning application for Dunton Hills indicates that the development will have a significant impact upon primary healthcare provision and generate increased demands upon healthcare services in the area. It is anticipated that a residential development of this scale is likely to generate the need for a new primary health care facility. This would be subject to NHS England prioritisation and approval processes. Detailed design and requirements would need to be discussed and agreed with the developer at the appropriate stages.
- 10.45 The GP practice at West Horndon is at physical capacity and will also be impacted by other recent planning approvals within the vicinity. Subject to NHS England prioritisation and approval process, it is likely that new health infrastructure will be required in the new development itself and options need to be considered for how capacity can be provided through the timeline of the development. These options need to consider the scale and timing of any new facility. Phased development of the facility could be considered. Re-providing the existing GP surgery within the new facility should be considered as part of the options appraisal, but will require appropriate consultation with the current GP Practice and the existing West Horndon community.
- 10.46 In line with other comments, the scale and nature of the facility required is dependent on the range and frequency of services required. Initial calculations show that the fully completed development will require a health facility of circa 658.29 m² for GP services. This figure may increase if it is shown that significant space is needed in West Horndon for other health and social care services. NHS England is willing in principle to discuss co-location with other public services and potential temporary use of other public-sector buildings (and vice versa). Any co-location would require the normal building and operational standards for NHS buildings to be met. Feasible options to increase primary healthcare capacity therefore would need to be considered and established.¹²

Hospitals

- 10.47 The BTUH has also indicated that due to the increase in population Basildon Hospital will need to expand their specialist services across the acute footprint to accommodate this predicted growth. BTUH will be seeking developer's contributions for this. Further information has been requested from the BTUH, vis the health partnership as to how the requirement has been calculated, particularly in light of recent hospital

¹² Reference required

investments and the additional funding which the combined trust may be able to obtain through restructuring to invest in new buildings and facilities.

- 10.48 Brentwood Community Hospital is a significant resource, which the BBCCG is committed to fully utilise to strengthen the community-based provision of healthcare. There may be an opportunity to further invest in Brentwood Community Hospital as part of the overall investment required in the healthcare infrastructure for the Borough, although this should not detract from directly investing in local communities, where the healthcare infrastructure need is demonstrated and would support the sustainability of that location.

Dentists, Pharmacies and Opticians

- 10.48 It is difficult to fully evaluate the impact on dentist surgeries of the projected growth from the local plan allocations, but it is likely to require an investment in expanded or new facilities. Appendix x provides an indicative forecast arising from the allocations. Particular 'urban' pressure points are potentially Herongate Dental Practice, Ongar Road Dental Practice and Hutton Village Dental Practice. It is anticipated that Dunton Hills Garden Village will generate sufficient population to support a new practice, possibly as part of wider healthcare infrastructure.
- 10.49 The Local Plan may also create positive business opportunities for pharmacies and opticians. Again, where feasible there may be options to cluster services around other healthcare infrastructure.

FINANCIAL CONSIDERATIONS

- 10.50 NHS England have indicated that it is not possible to accurately determine the build cost or size of new health facilities at this stage and that much will depend on a large number of complex and inter-related factors that can only be resolved at a more advanced stage in the planning process. It will not be the case that each new health facility would be a fixed size or would have a fixed range of services. Clinically there are circumstances where co location of GP and other NHS or social care functions are desirable and would be considered or sought.
- 10.51 The Council agrees that further, more detailed option and cost analysis is required in relation to final healthcare infrastructure projects. However, based upon potential headline contributions indicated in correspondence from NHS England and the Council's own calculations using NHS formulae this equates to circa £3m linked to Local Plan allocations. This is an estimate only at this stage and is carried forward to Part B of the report.
- 10.52 It is noted that the BTUH will be seeking a developer contribution towards infrastructure costs associated the expansion of Basildon Hospital. Further clarification

on this matter has been requested. The contribution level is significant and equates to circa £3013 per dwelling. The IDP currently includes this figure within the macro calculations to be found in Part B of the document, until the position is clarified.

- 10.53 In terms of ambulance services, the EEAST Estates & Development plans includes some allowance for growth in demographics of population changes and therefore any increase in requirements to meet these changes will require modelling to account for the required increased workforce. EEAST are currently participating in an independent service review commissioned by healthcare regulators to better understand what resources are needed to meet patient demand.

11 SPORT

INTRODUCTION

- 11.1 This section of the IDP is currently under final drafting. For an initial review of sports infrastructure needs and findings please see the technical evidence on play pitches and indoor sports facilities. The Draft Leisure Strategy should also be noted. Part B of the IDP also lists infrastructure projects.
- 11.2 This part of the IDP will be updated before the commencement of consultation on the Local Plan.

12 BUILT HERITAGE

OVERVIEW

- 12.1 This chapter of the IDP is mainly concerned with understanding Brentwood’s built heritage infrastructure, local priorities and the implications and opportunities of development. Built heritage makes a significant contribution to our daily lives, our sense of identity, community and place. It also has a clear economic value – not only connected to attracting visitors, but also if managed positively, to engendering investment confidence. The main themes explored in this chapter of the IDP include:
- understanding Brentwood’s built heritage;
 - implications of growth on key assets
 - infrastructure priorities and potential financial implications

BRENTWOOD’S BUILT HERITAGE ASSETS

- 12.2 The Brentwood Borough is rich in heritage assets; built, landscape and cultural. Brentwood’s organic growth is recognisable by the historic settlement patterns for its villages and hamlets, these are largely sited on routes to and from London and East Anglia and often interspersed by high quality green infrastructure.
- 12.3 The Council positively encourages the enhancement and understanding of the significance of heritage assets and apporions great weight to the protection of the Heritage Assets in any decision-making process for future development.

Listed Heritage Assets

- 12.4 Historic England maintains the list of protected buildings or sites known as ‘The Heritage List¹’ (officially the National Heritage List for England or NHLE). This list is the most up to date record of all nationally protected historic buildings or sites in England. Figure 12.1 below highlights the range of heritage categories and quantities of designated assets on the current list for Brentwood, together with some of the more important features in terms of listing.

¹ <https://historicengland.org.uk/listing/the-list/>

Figure 12.1: Listed Heritage Assets – Brentwood Borough

Heritage Categories ²	Quantities	Important Buildings and Sites	% of Total Listed Heritage Assets
Listed Buildings Grade 1	12	Ingatestone Hall, Thorndon Hall	2.24%
Listed Buildings Grade II*	27	GATEHOUSE AND COURTYARD RANGES 30 METRES WEST OF INGATESTONE HALL, CHANTRY CHAPEL AND MAUSOLEUM, THORNDON PARK, THORNDON PARK, BRENTWOOD,	5.05%
Listed Buildings Grade II	493	RUINS OF OLD CHAPEL OF ST THOMAS A BECKET	89.91%
Scheduled Monuments	12	The Chapel of St Thomas a Becket, Roman villa 100m north west of Handley Barns	2.24%
Parks & Garden Grade II*	1	THORNDON HALL	0.19%
Park & Garden Grade II	2	WARLEY PLACE	0.37%
	535		100%

12.5 Figure 12.2 below provides a map of the Borough with identified Grade1, II*, Scheduled Monuments and Parks and Gardens. From this plan it can be noted that...a high concentration of listed buildings are located upon historic routes through settlement villages; are historic farmstead complexes and/or are set within former large estates on high points within the Borough relating to the gentrification of the Borough post 17th C.

Figure 12.2: Important Buildings and Sites

To Insert

² Grade I buildings are of exceptional interest, only 2.5% of listed buildings are Grade I / Grade II* buildings are particularly important buildings of more than special interest; 5.8% of listed buildings are Grade II* / Grade II buildings are of special interest; 91.7% of all listed buildings are in this class and it is the most likely grade of listing for a home owner.

Conservation Areas

- 12.6 Conservation areas are areas that have been designated as being of special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance. The Planning (Listed Building and Conservation Areas) Act 1990 creates special controls for areas designated as conservation areas. Conservation area controls apply in addition to normal planning controls. The nature and size of conservation areas within the Borough varies considerably. They are all of special character or appearance and have historic or architectural interest that is worthy of preservation and enhancement. There are currently 13 conservation areas designated within the Borough as outlined in Figure 12.3.

Figure 12.3: Conservation Areas

Title	Date adopted (amended)	Area (ha.)	Type
Ingatestone High Street	27.11.1969 (17.09.1991 & 13.01.2010)	8.5	Village Centre
South Weald	02.11.1973 (22.07.1993)	4.0	Village Centre
Blackmore	12.12.1975	18.0	Village Centre
Great Warley	12.12.1975 (22.07.1993 & 17.10.2012)	4.0	Village Centre
Herongate	12.12.1975 (17.10.2012)	5.5	Village Centre
Station Lane, Ingatestone	22.09.1981 (17.09.1991 & 13.01.2010)	10.0	Residential Area
Hutton Village	23.04.1986	30.0	Residential Area
Fryerning	08.03.1991 (18.12.2013)	25.0	Village
Weald Park	22.07.1993	212.0	Historic Park and Garden
Thorndon Park	22.07.1993	243.0	Historic Park and Garden
Warley Place	22.07.1993	11.0	Historic Park and Garden
Brentwood Town Centre *	01.03.2000 (13.01.2010)	14.5	Historic Town Centre
Highwood Hospital	12.07.2001	5.1	Hospital

* Brentwood Town Centre Conservation Area comprises the amalgamation of the three conservation areas of Wilson's Corner, Chapel and Hart Street.

Local Listings

- 12.7 The NPPF contains policies that apply to heritage assets regardless of whether or not they are locally listed. However, local listing provides a sound, consistent and accountable means of identifying local heritage assets to the benefit of good strategic planning for the area and to the benefit of owners and developers wishing to fully understand local development opportunities and constraints.
- 12.8 Non-designated heritage assets (local listed heritage assets) can include buildings, places or areas of cultural and/or local significance which whilst not nationally designated make a positive contribution to the Historic Environment and its understanding. In decision making, proposals which affect locally listed heritage assets and/or their setting, must take into account the strong requirement for their retention and the enhancement of their significance locally.
- 12.9 Locally listed buildings within the borough are to be recorded on a live database. Whilst the Local Listing Programme is at embryonic stage, this list and its future enrichment is essential in conserving local distinctiveness and community engagement in the historic environment. The Council support the ethos of local listing and the opportunities it brings to engage a diverse range of stakeholders into the management and education of the local historic environment.

Archaeology

- 12.10 The Essex Historic Environment Record (EHER) is a computerised database of all listed and other historic buildings and all known archaeological sites, historic parks and gardens and other historic landscape features in the county, plotted onto linked digital mapping, and backed up in many instances by photographs, drawings and substantial written accounts. This function is managed and updated on a cyclical basis by ECC, the borough also has a dedicated County Archeologist within the Place Services Team at ECC, the services from within the ECC archaeology team extend to preapplication services to inform future site development and the embedding of below ground built heritage, along with the requirements and management of WSI (Written Schemes of Investigation).

IMPLICATIONS OF GROWTH

- 12.11 There are a number of heritage features which are located within or form part of Local Plan allocation sites and it will be important to maintain the integrity of the heritage buildings or sites. There are also opportunities for further research on allocation sites as part of any redevelopment to ensure that any archaeological or historic findings can be effectively reflected in new site interpretation and information. This may be particularly relevant to the development of brownfield sites within Brentwood town centre, where there may be as yet unknown historic connections or archaeological findings. New developments often succeed where there is a connection to the past which can be understood and appreciated in the present.
- 12.12 As with parks and gardens and ecological assets, there may be an impact with an increased resident population on local heritage where it is accessible to the public. It will be important to monitor and plan for any anticipated impacts, particularly around high growth areas.
- 12.13 There are a number of historic assets within Borough where it may be appropriate to develop business plans for redevelopment / refurbishment to support wider community interests, activities and uses.
- 12.14 Not all heritage is designated, and it will be important to support the local listing programme to enrich our understanding of local heritage and culture.

FINANCIAL CONSIDERATIONS

- 12.15 Potential financial considerations include:
- heritage interpretation and sign-posting, linked to wider projects on improving the public realm and legibility within the Brentwood Urban Area;
 - funding for the protection and redevelopment of heritage assets – particularly with wider community use options to support a growing population, and
 - support for the development of the local listings programme.

13 EMERGENCY SERVICES

OVERVIEW

13.1 This chapter of the IDP is concerned with key emergency services, which includes the police and fire and rescue services. As with other parts of the public sector, there has been substantial restructuring in service delivery to not only respond to changes in resources but also the increasingly challenges of societal demands. The ambulance service is treated separately under the chapter on health infrastructure.

13.2 Research on the future of policing in the UK identifies a number of new policing realities¹:

- policing takes place in a fully digital world, which influence crime recording, the application of digital technology and data;
- funding realities where private investment in crime prevention (for example cyber-crime) outweigh those of the state struggling to fund health, care and pensions expenditure;
- extreme pace of change with constant business innovation creating new criminal opportunities;
- advanced technology and knowledge management are essential for reducing crime and managing police services, and
- operating with near total transparency due to increasing surveillance by the public and police.

Driven by resourcing pressures and modern policing challenges, various operating models have been adopted including cross-force collaborations, government agency collaborations and shared multi-agency facilities.

13.3 The role of the fire service is also changing. There have been well documented calls for continuous improvement and cost reductions but significant improvements in community fire safety by local brigades have resulted in a large fall in the number of fire-related incidents. In 2009/10, fire and rescue services attended 830,161 fire-related incidents across Great Britain. By 2015/16, this had fallen to 654,571. The average age of firefighters is likely to increase with the proposed implementation of later retirement and this could have implications for the typical levels of health, fitness and experience among firefighters. In addition, changes in geographic population

¹ Deloitte – Policing 4.0 Deciding the future of policing in the UK

density, road use and improvements in home safety continue to affect both the nature and quantity of demand for fire and rescue services².

EXISTING INFRASTRUCTURE, GAPS AND PROGRAMMES

Police

13.4 The Police and Crime Plan for Essex³ sets out seven policing priorities to protect the county, namely:

- more local, visible and accessible policing;
- crack down on anti-social behavior;
- breaking the cycle of domestic abuse;
- reverse the trend in serious violence;
- tackle gangs and organised crime;
- protecting children and vulnerable people, and
- improve safety on our roads.

13.5 At its launch in 2016, the plan indicated a need to make spending cuts of between £10-12 million. The plan recognised that the current Essex Police property estate includes 80 buildings in a poor state of repair which will require £30 million of maintenance work to bring up to standard and expenditure of almost £2 million a year just to maintain the current condition. Based on careful analysis the plan was to reduce the estate to 30 buildings strategically placed around Essex. The force also needed a Headquarters that is modern and fit for purpose both now and for the next 20 years.

13.6 The implications for Brentwood Borough include the disposal of the former Police HQ building on London Road and integration of local policing infrastructure within Brentwood Town Hall. Uniformed officers who are currently based at the station – including community and local policing teams - will continue to have a presence in the town and will in future work from a shared hub at the Town Hall in Ingrave Road.

Fire and Rescue Services

13.7 The Essex County Fire and Rescue Service (ECFRS) manages fire risk across Essex. The purpose of the ECFRS is to protect and save life, property and the environment and serves a population of over 1.7m and 1,400 square miles. On average the service attends over 14000 incidents a year. The current service is staffed by approximately 1,215 firefighters (735 wholtime and 480 retained), 46 Control personnel and 266

² Commentary from Nicola Bateman, Karen Maher and Ray Randall 'Drivers of change in the UK Fire Service: an operations management perspective'.

³ <http://www.essex.pfcc.police.uk/what-we-are-doing/police-and-crime-plan/>

support staff. The service headquarters are at Kelevedon Park, Rivenhall and of the 51 fire stations within the operational area, 1 is located in Brentwood Town (Station 51 - wholetime and retained) and a retained crew at Ingatestone (Station 67).

- 13.8 The ECFRS Integrated Risk Management Plan (IRMP) forms part of the approach to identifying, accessing and managing risk in Essex. It is a strategic document and indicates a changing picture of risk within Essex. This includes:
- Flooding – flooding events and the risk of flooding is becoming more frequent as weather patterns continue to change.
 - Industrial incidents – planning effectively to manage major industrial incidents.
 - Transport incidents – responding quickly and effectively to road, rail, air and sea incidents and recognising the commuting linkages between Essex and London.
 - Major chemical, biological, radiological, nuclear and explosive attacks – the likelihood of major incidents or attacks of his nature has increased and has taken on a new focus.
 - Human disease – pandemic influenza and other contagious diseases offer a significant risk to the public.

IMPLICATIONS OF GROWTH

- 13.9 Discussions have taken place with Essex Police (Estates) over the implications of the Local Plan early in the plan formulation stage, but the Council is awaiting the outcome of detailed considerations on the implications of growth for local policing. S.106 / CIL contributions and examples of appeal decisions relating to police contributions for infrastructure have traditionally identified the need for staff, equipment, back office facilities and various types of operating infrastructure including drop in hubs.⁴
- 13.11 Discussions have also take place with Essex County Fire and Rescue Service, but no specific infrastructure requirements have been identified to date.
- 13.12 While too early to consider in detail, and along similar lines to healthcare infrastructure, there may be specific ITC requirements arising from the use and exchange of information, necessitating effective and secure high capacity broadband infrastructure.

⁴ [https://www.stratford.gov.uk/files/policy/HearingStatementsH-N/HS-63%20-%20Warwickshire%20Police%20and%20West%20Mercia%20Police%20\(4549-1\)%20-%20Matter%20I%20-%20Appendix%201.pdf](https://www.stratford.gov.uk/files/policy/HearingStatementsH-N/HS-63%20-%20Warwickshire%20Police%20and%20West%20Mercia%20Police%20(4549-1)%20-%20Matter%20I%20-%20Appendix%201.pdf)

FINANCIAL CONSIDERATIONS

- 13.13 With the local plan proposing a new settlement and major urban extensions it is prudent to plan for potentially new multi-use and multi-agency space within new and existing community facilities. In terms of Dunton Hills this may include planning new community facilities to provide capacity for drop-in or flexible operational police space. It would also be wise to set aside a working budget within the IDP for enhanced local policing until further information is supplied.

14 GREEN INFRASTRUCTURE

INTRODUCTION

14.1 In the new NPPF Green Infrastructure is defined as:

'A network of multi-functional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities'.

Although sometimes referred to as Blue Infrastructure, Green Infrastructure also encompasses river systems and environs. The NPPF places a strong emphasis upon strategic policies in plans focusing upon the conservation and enhancement of the natural, built and historic environment including landscapes and green infrastructure (para 20d). Green infrastructure is also seen as part of essential place-making to enable and support healthy lifestyles (para 91c), tackle air pollution (para 181) and managing the impacts of climate change particularly in vulnerable areas (para 150a). It is important for local plans to take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure (para 171).

14.2 As part of the evidence base to support the development of the Local Plan, the Council commissioned Groundwork in 2015 to produce a Green Infrastructure (GI) Strategy. This strategy suggests that in the Brentwood Borough, GI could be practically defined as including parks; open spaces; recreational sports facilities such as golf courses, cricket, rugby and football pitches; woodlands; wetlands; grasslands; rivers and canal corridors; allotments; cemeteries; and private gardens.

14.3 The GI strategy also highlights the importance of planning for Green Infrastructure at all spatial scales, nationally, regionally, locally and at a neighbourhood level and across a number of timescales (short, medium and long term). GI is considered important socially, economically and environmentally with a role in providing:

- a sense of local distinctiveness and beauty;
- space for eco-systems to develop and habitats for wildlife;
- an accessible and integrated network of green travel routes;
- places for outdoor sport, recreation, education and relaxation;
- areas for local food production – allotments, gardens and through agriculture
- natural spaces for accommodating climate change, including areas for flood alleviation and cooling urban heat islands.

- 14.4 The new Local Plan highlights the need to improve the linkages between formal and informal open spaces in the Borough and ensure that strategic green corridors are protected and where opportunities arise (for example through new development) that green infrastructure provision is enhanced.
- 14.5 Figure 14.1, sets out a working GI typology for this section of the IDP which is based upon the GI Strategy, Open Spaces, Sport and Recreation Study¹, Natural England's Green Infrastructure Guidance² and the council's policy position set out in the new Local Plan.

Figure 14.1 – Brentwood Green Infrastructure Typology

	Type of GI	Key Policy Elements
i)	Parks and Gardens	County Parks, Borough Parks and Recreation Grounds, Historic Parks and Gardens.
ii)	Ecological assets and Natural and Semi-Natural Greenspaces (urban / rural)	Special Sites of Scientific Interest (SSSI), Local Nature Reserves (LNR), Local Wildlife Sites (LoWS), Woodlands, Geological Assets, Grasslands, Other Assets.
iii)	Green and Blue Corridors	Main Rivers, Large Ordinary / Non-Main River Watercourses, Major Tributaries, Wetland, Hedgerows, Major Road Corridors, Major Rail Corridors, Cycling Routes / Network, Pedestrian Paths and Rights of Way, Protected Lanes.
iv)	Outdoor sports facilities and provision for children and teenagers	Natural green surfaces – tennis courts, bowling greens, sports pitches, golf courses, school and other institutional playing fields, and other outdoor sports areas. Green formal / informal recreation areas for children / teenagers.
v)	Amenity Greenspace	Amenity greenspace, Village Greens, Commons, other Informal Greenspace, Locally Designated Greenspace.
vi)	Allotments	Parish and borough council owned / managed.
vii)	Cemeteries and churchyards	Public and privately owned facilities.

- 14.6 Detailed specific issues relating to sport and recreational facilities (green surfaces primarily) are covered under the relevant chapter, although they are considered and listed as part of the wider Green Infrastructure framework. Technical information on Brentwood's GI sites has been obtained from a number of sources including:

- Special sites of Scientific Interest (SSSI) – Natural England Designated Sites

¹ Details to be confirmed

² Natural England's Green Infrastructure Guidance (NE176), Natural England, 2009

- Local Wildlife Sites (LoWS) – Brentwood Borough Local Wildlife Site Review December 2012 and LoWS Update 2016 – Essex Ecology Services Ltd
- Open Space Assessment - Ploszajski Lynch Consulting Ltd (2016)
- Historic Parks and Gardens – Historic England Listings
- Local Geological Sites – GeoEssex

PARKS AND GARDENS

OVERVIEW

14.7 According to the Parks Alliance¹, parks deliver value in many ways, including:

- Improved physical and mental health for users;
- Environmental benefits and contribution to sustainability, and
- Economic impact: through commercial activities, supporting tourism and property values.

Statistics suggest that £1bn of yearly savings in averted NHS health costs could be made if every household had equitable access to green space. Eight in 10 people with children under 10 visit parks at least once a month. In East England, 54% of children visit local urban parks in an average month.²

14.8 Within the current economic climate there are significant challenges to maintaining high quality parks and greenspaces. The Parks Alliance highlights three areas of critical concern:

a) Funding and innovation – dwindling resources for green spaces with the Fabian Society predicting a reduction in spending on parks by 60 per cent by 2020³.

b) Environment and sustainability - concerned about the general impact of climate change and working to mitigate its effects, and also the specific protection of UK species, regimes to prevent diseases, and the use of environmental management techniques to mitigate the impact of flooding and to conserve water.

c) Parks for health - in addition to being places of leisure and relaxation, for many, parks act as free gyms. Parks are open to and well used by the whole community, increasingly with additional facilities to support physical fitness. Parks and open spaces are a cost-effective means of maintaining physical and psychological wellbeing. They will play an increasing role in tackling problems of public health, including obesity, and the impact of social isolation.

14.9 Within the urban context, the seminal work on public parks and social renewal – ‘Park Life’ by Comedia and Demos indicates how important public parks are as an integral part of the public realm.⁴ Of the 20 recommendations within the Comedia report, a number remain relevant today in terms of infrastructure planning, including:

¹ The Parks Alliance is a not for profit membership body with representation from across the professional sectors with an interest in parks and greenspaces.

² Figures from <https://www.theparksalliance.org/stats/> - accessed 21st March 2017

³ The Fabian Society – Places to Be

⁴ Park Life – Urban Parks and Social Renewal – A Report by Comedia in association with Demos.

- Clearly defining the purpose of each park and open space.
- Developing planning policies for local space which is flexible and responsive to local needs.
- Investing in different forms of park management – direct provision, partnerships, voluntary management and trusts.
- Establishing ‘experimental funds’ for local park initiatives.
- Integrating sustainability and health agendas.

BRENTWOOD’S PARKS AND GARDENS

14.10 Brentwood is fortunate is having a wide range of parks and gardens, including two country parks (Thorndon and Weald), large Borough parks (Hatch Road Park, Bishop Hall Park, Merrymeade Park, Warley Park, St. Faiths Park and Hutton Park), and registered historic parks and gardens (at Thorndon and Weald Country Parks plus Warley Place). These parks and gardens are detailed below in Figure 14.2 below.

Figure 14.2 Park and Gardens

Types of Park and Gardens	Size (ha)	Description	Formal Policy Designations	Broad GI Classifications
Country Parks				
Thorndon Country Park	222.48	Formal Country Park split into Thorndon North – woodlands and Childerditch Pond and Thorndon South with its open parkland and wide ranging views. Ownership is split between the Woodland Trust and Essex County Council.	Green Belt, Country Park, Historic Park and Gardens, SSSI, LoWS, Ancient Woodlands, Important Site for Geology, Ancient Monument,	Strategic Green Infrastructure - Large Country Park with Informal and Natural Open Spaces, Grassland, Woodland and large Pond. Very significant GI asset.
South Weald Country Park	187.55	Formal County Park with woodland, lakes, hay and wildflower meadows, deer park, open grassland and spectacular views. The park is famous for its wildlife, including fallow deer, cattle, herons, mallard ducks and other water birds.	Green Belt, Country Park, Historic Park and Gardens, LoWS, Ancient Woodlands, Important Local Site for Geology,	Strategic Green Infrastructure - Large Country Park with Informal and Natural Open Spaces, Grassland, Woodland, Lakes and Meadows. Very significant GI asset.
Medium to Large Borough Parks				
Hatch Road Country Park	3.8	Located on the site of a former British Telecom depot, the site was designated a LoWS due to its value as a grassland site with botanical interest.	Green Belt, Borough Park, LoWS	Medium sized park with Informal and Natural Open Spaces, Primarily Grassland with tree and hedge features.
Bishop’s Hall Park	4.4	Park provides open green space for general recreation alongside senior and junior play	Green Belt, Borough Park, Recreation Facilities	Medium sized park with informal and formal recreational features

		facilities and hard courts. It is surrounded by trees and hedges. The park is also located close to the Brentwood Centre.		
Merrymeade Park	14.33	Merrymeade Country Park is managed by Brentwood Borough Council. The site is split into a number of fields, two of these being owned by Essex County Council and leased the Brentwood Borough Council and the other being owned by Brentwood Borough Council. The site is an oasis for wildlife close to the town centre and it is therefore managed primarily for nature conservation. This 34 ha site consists of four grassland fields, scrub, a small area of woodland and wetland habitats including a pond and stream.	Green Belt, Borough Park, LoWS	Large park with Informal and Natural Open Spaces, Predominately unimproved Grassland, with ponds, streams, hedgerow and scrub features.
Warley Country Park	21	Warley Country Park covers 21 hectares of open space for quiet informal recreation. The open space, which has been developed on former farmland, includes sizeable areas of naturally colonising secondary woodland, hedgerows, a stream and a pond.	Green Belt, LoWS, Borough Park	Large park with Informal and Natural Open Spaces, Primarily Grassland but with Woodland, Hedgerows, Pond and Stream features.
St. Faiths County Park	16	St Faith's has been managed by Brentwood Borough Council since 1999. Before this, it formed part of the grounds of St Faith's Hospital. The site is managed to benefit wildlife and biodiversity whilst still allowing informal public access. The park covers 16 hectares of attractive open grassland fields bounded by mature hedgerows. There is also small areas of scrub and wet woodland, watercourses and ponds.	Green Belt, LoWS, Borough Park,	Large park with Informal and Natural Open Spaces, Primarily Grassland, but with Pond, Stream, Hedgerow and Woodland features.
Hutton Country Park	37	The park covers 36 hectares, containing a large area of natural grassland, an area of ancient woodland, ponds, wetland and the River Wid, which forms the northerly border. Supporting a vast array of native flora and fauna and is thus managed as an area of conservation value in what is otherwise an area of vast intensive arable land and urban expansion.	Greenbelt, Local Nature Reserve (LNR), LoWS, Ancient Woodland, Borough Park,	Large park with Informal and Natural Open Spaces, made up primarily of grassland, woodland, ponds, and wetlands. The River Wid forms the northern boundary of the park.
Historic Parks and Gardens				

Weald Park	187.55	A late C17 and early C18 park and woodland, developed in the mid C20 as a country park. (list entry 1000747)	Green Belt, Country Park, Historic Park and Gardens, LoWS, Ancient Woodlands, Important Local Site for Geology,	Historic features and horticultural value.
Warley Place	11	Remains of the wild and natural garden created by the horticulturalist Ellen Willmott between the 1890s and her death in 1935. (List entry – 1000746)	Historic Park and Gardens, LoWS	Historic features and horticultural value.
Thorndon Country Park (Thorndon Hall)		The site of an early C18 park and woodland by Lord Petre, with mid C18 developments to park and pleasure grounds by Lancelot Brown and subsequent minor additions in the 1790s probably by Richard Woods, now a C20 country park and golf course. (List entry – 1000314)	Green Belt, Country Park, Historic Park and Gardens, SSSI, LoWS, Ancient Woodlands, Important Site for Geology, Ancient Monument	Historic features and horticultural values.

Thorndon Country Park - Overview

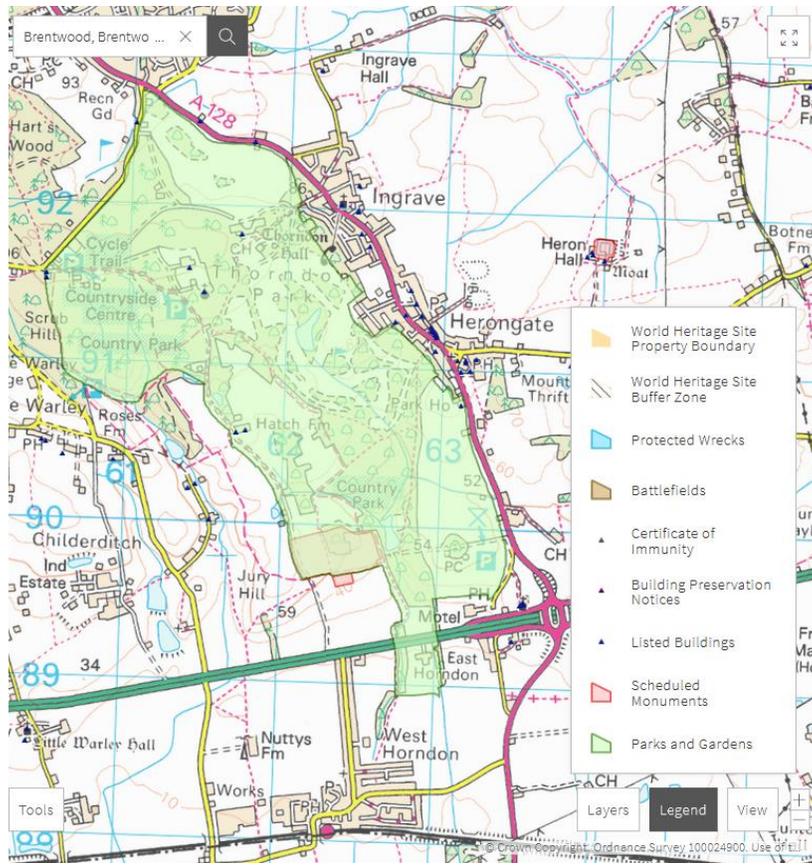
- 14.11 Thorndon Country Park is the largest park in the Borough at 222.48 ha. Formally the park is split into Thorndon North – woodlands and Childerditch Pond and Thorndon South with its open parkland and wide-ranging views. Ownership is split between the Woodland Trust and Essex County Council. The park has a number of facilities and features, including:
- **Thorndon North** – Countryside Centre (managed in conjunction with Essex Wildlife Trust), shop and tearoom and children’s Gruffalo trail. There are also walking routes, organised orienteering courses / routes and bike hire.
 - **Thorndon South** – Pavilion Cafe and barbecue area. Other activities / features include a dog activity trail and fishing at Old Hall Pond.
- 14.12 The Country Park is generally used for informal recreation. There is public access to all parts of the site, with four designated public footpaths and a designated public bridleway.
- 14.13 Thorndon County Park is covered (in full or in part), by formal planning policy designations including Green Belt, Historic Parks and Gardens, SSSIs, Local Wildlife Sites, Ancient Woodland, Important Local Site for Geology and an Ancient Monument. Thorndon Country Park is a strategic important area of green infrastructure for the Borough.

Thorndon Country Park – Historic Context

- 14.14 The country park is part of the original Thorndon estate and has a number of important heritage assets as detailed below in Figure 14.3.⁵ The first park of 300 acres was created in 1414 and based around the old Thorndon Hall. This was a deer park used for hunting. By the 18th Century the meaning of the term `park` changed to an emphasis on landscape rather than hunting. The 8th Lord Petre, an eminent horticulturist, designed a landscape plan for Thorndon, which was drawn up by Bourginion in 1733. Some of this plan was carried out before the 8th baron died at a young age. It included very formal areas alongside natural ones and had agriculture as an integral part (Old Thorndon Pastures). He cultivated many exotic plants and trees.
- 14.15 The 9th Lord Petre built a new Hall to the north of the estate (now privately-owned flats) and commissioned his own plan by Capability Brown to re-landscape this area - now used as a golf course. Such extravagancies bankrupted the family until the 12th baron turned their fortunes in the third quarter of the 19th Century. Agriculture became the focus of the estate. The agricultural depression of the late 1870s, followed by the destruction by fire of Thorndon Hall in 1878 led to the family relocating permanently to Ingatestone. When the 16th baron was killed in the First World War, the estate was broken up and sold off. The land in the current Country Park was acquired in 1939, 1951 and 1992.

Figure 14.3 Thorndon Country Park and Heritage Assets

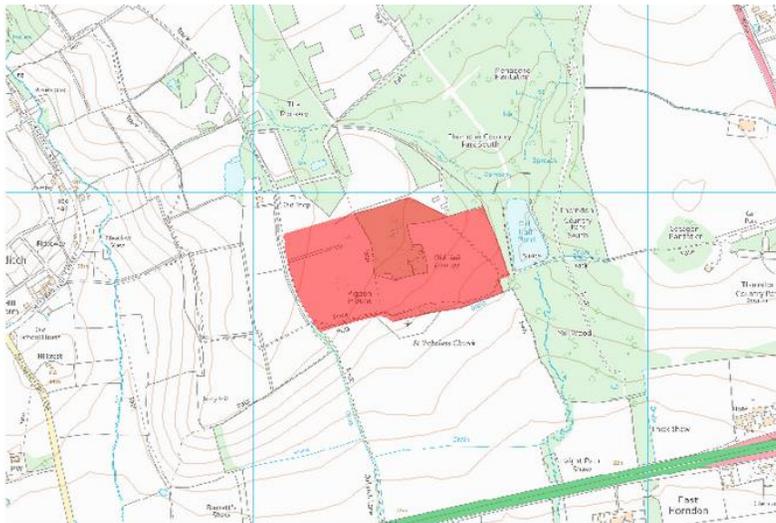
⁵ Information reproduced from Historic England mapping service,



- 14.16 The Register of Historic Parks and Gardens provides a Grade II* listing for Thorndon Hall historic park and gardens and indicates that the gardens associated with Thorndon Hall lie to the south and are laid to lawn set with a small circular stone basin. Within the woodlands which lie beyond the east and west fronts are two mounds which appear on the eighth Lord Petre's 1733 plan of the landscape. The park surrounding Thorndon Hall, which sits in the north-east corner of the site, is extensive and contains remnants of the early C18 layout, together with features of Lancelot Brown's work, all partly overlaid by C20 developments (including golf course). Below the new woodland and the golf course lie some of the oldest features of the Thorndon landscape. Located centrally in this southern section are Menagerie Plantation within which lies Old Hall Pond, and below it Mill Wood. The woodlands were developed from the mid C18 onwards although Old Hall Pond was retained from the early C18 formal scheme. The walled kitchen garden lies c 350m to the south-west of Thorndon Hall. It was built in this position when the Hall was erected in 1763 and remained in use as a kitchen garden until the C20. It was retained by the sixteenth Lord Petre when the rest of Thorndon Park was sold. The ground is laid to lawn and planted with a variety of specimen trees and shrubs.
- 14.17 According to the Historic England listings, the monument includes the above and below ground remains of Old Thorndon Hall and its associated gardens, including remains of the moated medieval manor and Old Hall and the area of gardens around

the house which formed the original landscaped gardens of the 16th century, partially redesigned in the 18th century. Figure 14.4 below provides information of the location of the ancient monument listing.

Figure 14.4 Old Thorndon Hall and Gardens – Ancient Monument



- 14.18 Listed structures at the Country Park include Thorndon Hall (Grade 1) and the Chantry Chapel and Mausoleum (Grade II*).

Thorndon Country Park - Woodlands and Grasslands

- 14.19 According to the Essex Woodland Project, Thorndon Country Park has several blocks of ancient woodland, parkland and plantations. Ancient trees are an outstanding feature. Giant oak and hornbeam pollards indicate that the area was once a deer park. Parts of park were historically covered by heathland, now a scarce habitat in Essex, with projects now progressing to restore the heathland habitats and also returning areas of the park to grassland and broadleaved woodland.⁶ The grasslands are managed for wildlife, landscape and recreation value. Short grass areas are suitable for organised events. Standard trees and wood clumps are maintained primarily for landscape value. Old Thorndon Pastures are managed under Countryside Stewardship as grazing units. Grazing has recently been reintroduced to the wood pasture in a bid to restore it to favourable condition.

⁶ Information reproduced from <http://www.essexwoodlandproject.org/woodlands/thorndon/> - accessed 20th March 2017.

- 14.20 The Forestry Commission England Woodland Management Plan for the park,⁷ outlines that the woodlands are managed for amenity, wildlife value and timber production (both coppice and high forest). Alien species (self-seeding sycamore, Turkey oak and cherry laurel) are routinely removed during felling operations. Structural diversity is maintained and natural regeneration is encouraged, along with planting as required.
- 14.21 Childerditch Wood is situated within Thorndon Country Park, west of Little Warley to the south of Brentwood. The wood is on a slope with a south-west facing aspect and covers an area of 9.5 Hectares. It is a notified SSSI. The wood has a mix of standard types but is largely Common oak high forest. Areas of the wood have been subject to replanting. Along the woods south-west facing edge are two substantial ponds. Upper Pond to the north-east of the area and Childerditch Pond to the south.

Thorndon Country Park - Geology⁸

- 14.22 The woodland has a complex geology consisting largely of London Clay with a band of Claygate Beds along the northeast east edge. An area of alluvial deposits lies to the north-west of the larger Childerditch Pond in the valley with a small area of Head between the alluvial deposits and the smaller pond. There is a small area of head to the north of the smaller pond and also a band of Head to the east of the larger pond to the edge of the wood. There is a slither of glacio-alluvial sand and gravel on the north-east edge of the wood towards the sand and gravel pits.
- 14.23 Thorndon Country Park North and Little Warley Common have a varied geology, the underlying rocks providing evidence of two periods of our distant past. The oldest surface rocks date back to the Eocene period and consist of London Clay, Claygate Beds and Bagshot Sands, three types of sediment laid down in a sub-tropical sea some 50 million years ago. There are no permanent exposures of these rocks although Bagshot Sand is frequently visible in the roots of fallen trees at the northern end of the country park.
- 14.24 To the south of the park and on Little Warley Common are large spreads of glacial gravel which date back to the middle of the Ice Age. This gravel was deposited some 450 000 years ago by colossal torrents of melt water issuing from the Anglian ice sheet, the edge of which was then situated only a short distance north of here. At that time ice covered almost all of Britain to a maximum thickness of over one kilometre. The gravel therefore provides evidence of an exceptionally cold period of the ice age, a time when Essex was barren of virtually all life – in contrast to the flora and fauna that can be seen at Thorndon today.

⁷ Forestry Commission England Thorndon Country Park Woodland Management Plan 1st April 2012 to 31st March 2032

⁸ Majority of geology information from <http://www.geoessex.org.uk/brentwood.html>

Thorndon Country Park - Ecology and Biodiversity

- 14.25 The park attracts a large number of woodland birds and sees more than its fair share of passage migrants and winter visitors. For example, large flocks of siskins and redpolls often gather in the birches, and bramblings can be seen near to the centre feeding on beech mast. It also hosts an unusually wide variety of butterflies, including the uncommon purple and white-letter hairstreaks.
- 14.26 The park features two official Local Wildlife Site (LoWS) designations:
- Bre92 – Thorndon Country Park North – generally managing as high forest. When harvesting mature Beech and Pine, favour replacement by a greater proportion of native broadleaved species, although retaining some Beech and Pine is beneficial to bird life. Key management issues include visitor number and also the management of Great Crested Newts which are known to inhabit several ponds.
 - Bre106 – Thorndon Country Park South – desirable management - consider grazing (ideally sheep) on Jury Hill and adjacent grasslands. Maintain restoration of old parkland landscape. Management issues include high visitor numbers.⁹

South Weald Country Park

- 14.27 Measuring 187.55 ha, South Weald has woodland, lakes, hay and wildflower meadows, deer park, open grassland and spectacular views. The park is famous for its wildlife, including fallow deer, cattle, herons, mallard ducks and other water birds.
- 14.28 The park has four main car parks, toilet facilities and a newly refurbished visitor centre with shop and café. Visitors can also borrow 4/4 all-terrain mobility scooters to access various parts of the park on a free basis if registered with shop mobility. The park is also a popular destination for educational visits and social events such as weddings and birthday parties, for which there is supporting services available. Popular park activities include the Stick Man trail, picnics, cycling and walking along numerous trails, horseriding and birdwatching.
- 14.29 Weald County Park is covered (in full or in part), by a number of formal planning policy designations, including Green Belt, Historic Parks and Gardens, LoWS, Ancient Woodlands, and an Important Local Site for Geology. In terms of its broad Green Infrastructure classification the park would be considered a strategic green

⁹ Information reproduced from Brentwood Borough Local Wildlife Site Review 2012 Final December 2012 – Essex Ecology Services Ltd

infrastructure asset with informal and natural open spaces, grassland, woodland, lakes and meadows.

Medium to Large Borough Parks

14.30 Key medium to large Borough parks include:

Hatch Road 3.8ha – habitats include grassland, hedgerow, scrub and woodland. LoWS. Management plan in place since 2014.

Bishop’s Hall 4.4ha – four grass fields separated by mature trees and hedges, play equipment and car park, adjacent to Hatch Road Park. Management plan since 2014.

Merrymeade Park 14.33ha – consists of four grassland fields, scrub, a small area of woodland and wetland habitats including a pond and stream. Significant wildlife interest and close to Town Centre

Warley Country Park 21ha – large area of open space used for informal recreation - developed on former farmland, includes sizeable areas of naturally colonising secondary woodland, hedgerows, a stream and a pond.

St. Faiths Country Park 16ha – St Faith's has been managed by Brentwood Borough Council since 1999. Before this, it formed part of the grounds of St Faith's Hospital. The site is managed to benefit wildlife and biodiversity whilst still allowing informal public access. The park covers 16 hectares of attractive open grassland fields bounded by mature hedgerows. There is also small areas of scrub and wet woodland, watercourses and ponds.

Hutton Country Park 37ha – habitats include woodland, hedgerow, scrub, grassland, ponds, rivers and streams. currently Brentwood’s only LNR. LNR’s are areas of local importance that may contain species or features that are locally rare or declining. These areas are protected and managed to provide accessible natural green space and opportunities for the public to learn about and study nature.

Further information is available in Figure 14.2 above.

Historic Parks and Gardens

14.31 Information on Thorndon Country Park is discussed in detail under para 14.16.

14.32 Weald Park is a Grade II historic park and garden originating from the late C17 and early C18 park and woodland, developed in the mid C20 as a country park. The garden and pleasure grounds lay to the east of the site of the hall and survive today (2000) as earthworks and one set of brick steps, representing the C19 terraced formal garden

located between the hall and the Belvedere Mount which lies c 100m to the east, edged by a ha-ha wall on its eastern boundary. The C19 formal gardens used the walled enclosures from the C16 and C17 garden as their basis (CL 1897). The raised mount was created in the early C18 by Samuel Smith at which time it was surmounted by a Belvedere tower. The mount at that time was laid out in a complex series of paths and planting; this was softened into a wilderness during the C19. Some of the planting from the late C19 survives although only the base of the tower remains.¹⁰

- 14.33 Warley Place is a Grade II historic park and garden which contains the remains of the wild and natural garden created by the horticulturalist Ellen Willmott between the 1890s and her death in 1935. One of Brentwood’s hidden assets, the site is maintained as a nature reserve by Essex Wildlife Trust.

Infrastructure Challenges

- 14.34 Figure 14.5 below provides a list of the main maintenance, development or infrastructure issues connected to each park site. The majority of information was obtained from the open spaces audit completed in 2016.

Figure 14.5: Current Park Issues

Types of Park and Gardens	Infrastructure Issues
Country Parks	
South Weald Country Park	Open spaces audit would seem to indicate that some improvements could be made to paths and roads.
Thorndon Country Park	Open spaces audit would seem to indicate that some improvements could be made to paths and roads.
Medium to Large Borough Parks	
Hatch Road Country Park	In the Open Spaces Study this park scored particularly low for the quality of its entrance, paths and roads, grassed areas, general tidiness, safety and security and parking and accessibility.
Bishop’s Hall Park	Improvements to amenities and park features.
Merrymeade Park	Site scores low for general tidiness on the Open Spaces Audit. LoWS review indicates halting further expansion of scrub into grassland and manage hedgerows to maintain thick network of scrub habitat
Warley Country Park	LoWS review indicates a need to maintain the balance of scrub blocks within rough grassland, preventing excessive spread of scrub. Park scores low for parking and access, general tidiness and the quality of the entrance.
St. Faiths County Park	Poor scorings for the quality of the entrance, footpaths, boundaries, general tidiness, security and accessibility. LoWS assessment suggests a need to maintain and, if possible, extend network of thick hedgerows. Manage grasslands to maximise diversity of grassland sward types.
Hutton Country Park	LoWS audit indicates a need to manage grasslands to maintain a mosaic of grassland types; maintain thick hedgerows
Historic Parks and Gardens	
Weald Park	Continuing to support the work of Essex WT in wildlife preservation and enhancement.
Warley Place	The LoWS places a strong emphasis upon maintaining the historic environment and landscape.

¹⁰ Information from <https://historicengland.org.uk/listing/the-list/list-entry/1000747>

Thorndon Country Park (Thorndon Hall)	Need minimize impact on important heritage assets, while supporting visitor interest.
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IMPLICATIONS OF GROWTH AND RESOURCES

- 14.35 Population growth through new housing is likely to place additional visitor pressures on local parks. It is too early to quantify the full impact of this growth, but it would be advisable to monitor usage levels and establish a range of prioritised improvements / interventions as part of the development of the Council's Leisure Strategy. There are also clear opportunities to build new strategic green infrastructure connections across the Borough. One of the most important being the connection through Dunton Hills Garden Village to strategic green infrastructure to the north and south. There are also other opportunities across the Borough subject to individual site plans.

ECOLOGICAL ASSETS

OVERVIEW AND HEADLINES

14.36 As with a number of sections within the Green Infrastructure chapter there are a cross-over of locations and classifications. For the purposes of this section, ecological assets are classified as Special Sites of Scientific Interest (SSSI), Local Nature Reserves (LNR), Local Wildlife Sites (LoWS), Ancient Woodlands and Geological Assets. These are some of the Borough’s most important places for scientific interest, wildlife, geology and environmental diversity.

Sites of Special Scientific Interest (SSSI)

14.37 In terms of definitions a Site of Special Scientific Interest (SSSI) is the land notified as an SSSI under the Wildlife and Countryside Act (1981), as amended. SSSI are the finest sites for wildlife and natural features in England, supporting many characteristic, rare and endangered species, habitats and natural features. Within the Brentwood Borough there are three SSSI which are detailed below in Figure 14.6¹.

Figure 14.6: Sites of Special Scientific Interest (SSSI)

SPECIAL SITES OF SCIENTIFIC INTEREST (SSSI)	Size (ha)	Description	Issues
The Coppice, Kelvedon Hatch	9.30	The Coppice, Kelvedon Hatch, is an ancient semi-natural broad-leaved wood, developed over a complex geology of Claygate Beds, Bagshot Beds and Head, in the small valley of a tributary of the River Roding. Two main woodland types are present, base-rich springline Alder Woodland and Oak-Hornbeam Woodland. The base-rich springline Alder Woodland is uncommon, both nationally and in Essex, and the Coppice contains a more diverse flora than other local examples of this stand type.	
Curtismill Green, Navestock	47.8	Curtismill Green is an area of unimproved grassland and scrub about five miles west of Brentwood on soils derived from London Clay and Chalky Boulder Clay. There are patches of valley gravel and alluvium locally. It is a small, separate relic of the ancient Forest of Waltham, of which Epping Forest is the largest surviving fragment. The varying soil conditions give rise to both damp and dry grassland containing several species which are uncommon, decreasing or unusual in the county.	Parts of the SSSI has been described as unfavourable declining - AGRICULTURE - INAPPROPRIATE CUTTING/MOWING,LACK OF CORRECTIVE WORKS - INAPPROPRIATE SCRUB CONTROL,PUBLIC ACCESS/DISTURBANCE - PUBLIC ACCESS/DISTURBANCE,VEHICLES - VEHICLES - OTHER,

¹ Information obtained from <https://designatedsites.naturalengland.org>

Thorndon Park	148.52	Thorndon Park is an area of semi-natural broad-leaved woodland and ancient parkland supporting a range of habitat types developed over Claygate and Bagshot Beds and gravels to the south of Brentwood. The woodland includes the Lowland Birch-Sessile Oak and Pedunculate Oak- Hornbeam types and the site supports an outstanding assemblage of Beetles (Coleoptera) including one species which is rare and vulnerable in Britain.	
Total	205.62		

Local Nature Reserves

- 14.38 Local authorities can create Local Nature Reserves (LNR) if they control the land and intend for the site to be open (at least in part) to the public. A site can be chosen as locally important for wildlife, geology, education and general enjoyment (without disturbing wildlife). A wide variety of types of land can make suitable LNRs. Brentwood has one formally designated LNR – Hutton Country Park – which has been owned by Brentwood Borough Council since 1997. The 36ha park supports a large range of native flora and fauna and contains a large area of natural grassland, an area of ancient woodland, ponds, wetland and the River Wid, which forms the northerly border of the site.

Local Wildlife Site (LoWS)

- 14.39 Local Wildlife Sites are areas of land that are especially important for their wildlife. They are some of our most valuable wildlife areas. Local Wildlife Sites are identified and selected locally using scientifically-determined robust criteria and surveys. Brentwood is very fortunate in having a wide range and number of LoWS (147 in total). The list of LoWS is available at Appendix x to this chapter. A number of LoWS sites are within close proximity to development sites or contained within large site allocations. These LoWS will need to be afforded strong protection as part of any development proposals. A wide range of maintenance and enhancement works has also been identified for a number of LoWS sites.
- 14.40 There are also a number of Potential LoWS identified in the 2012 study. These are detailed below in Figure 14.7. It can be noted that two sites in particular (highlighted in blue) – Brentwood Community Hospital and Green Meadows are within close proximity to development sites and further analysis is required to potentially support full LoWS designation.

Figure 14.7: Potential Local Wildlife Sites

Potential LWS	Name	Detail
BrePLoWS1	Stawberry Wood	This may well be an old, possibly ancient, piece of woodland. However, it has been almost totally coniferised, removing the semi-natural canopy, understorey and ground flora to the extent that it is now a poor ecological unit. However, it lies within an important cluster of old woodland sites and restoration of a semi-natural broadleaved canopy could see relatively quick improvements in its wildlife value, provided that the woodland soil profile is adequately protected, and could easily see it promoted to the full LoWS register.
BrePLoWS2	Beredon's Common (Coombe Green)	At first sight this wood of Pedunculate Oak (<i>Quercus robur</i>), birch (<i>Betula</i> spp.) and Sycamore (<i>Acer pseudoplatanus</i>) might appear to comprise a developing ecological link between Foxburrow Wood and Coombe Wood LoWS. However, the origin of this site lies in open, rough grassland as an ancient village green. The land is still a Registered Common (CL 103) and Ordnance Survey maps of 1881 show it to be open, rough ground which, knowing the sandy nature of the underlying soils, might have been heathy in nature. Given the scarcity of old heathland in Essex, it is suggested that the value of this site lies in recreating open, heathy vegetation, perhaps with scattered trees, rather than promoting it as a woodland link between the two adjacent LoWS.
BrePLoWS3	School Road Wood East	This Site comprises a strip of old woodland running along the southern side of a former country lane, now blocked off to prevent access by traffic. It follows the parish boundary and is, to some extent, a continuation of the Reading Springs LoWS to the west, although it is less clearly ancient in origin. It is suggested that this site has great potential as a woodland access site for less able persons, including wheelchair users, using the still present tarmac path of the old road as a means of passing along the woodland strip. This could allow good opportunities for this section of the public to experience and enjoy woodland ecology in a safe and easily accessible environment. In order to fulfil this potential, some work on clearing the tarmac track would be needed, along with improved parking arrangements at either end.
BrePLoWS4	Hook End	These two fields comprise a mosaic of dry, acid grassland, taller rough vegetation on more neutral soils, Bramble (<i>Rubus fruticosus</i> agg.) scrub and some wet woodland associated with a small spring feature in the southern section. This site might represent old grassland habitat, although it is seemingly lacking in plants indicative of such conditions. However, further research into the site's history may reveal evidence of this. The habitats look ideal for reptiles and good populations of these BAP species could be sufficient to promote the site to full LoWS status. The invertebrate populations may well also repay closer inspection. The Site is in a location that would make it attractive to housing developers and these outstanding ecological queries should be addressed in any associated ecological appraisal of the Site.

BrePLOW5	Hampden Wood	<p>This small wood, being promoted as an urban nature reserve by Brentwood Council, is undoubtedly of some nature conservation value in the local context, but it is felt that its qualities do not merit the level of county importance, which is implied by full LoWS status.</p> <p>The canopy comprises rather badly storm-damaged Sweet Chestnut (<i>Castanea sativa</i>), with some London Plane (<i>Platanus x hispanica</i>) and planted but maturing Pedunculate Oak (<i>Quercus robur</i>) and Beech (<i>Fagus sylvatica</i>), whilst Rhododendron (<i>Rhododendron ponticum</i>) and Laurel (<i>Prunus laurocerasus</i>) occur in the understorey. Bamboo plants in the ground vegetation further enhance the idea that this is a heavily landscaped wood. Reference to old Ordnance Survey maps suggests that this is a remnant of ornamental woodland associated with a large property called Hampton House, which stood where the houses of Hamilton Crescent now stand. Management to increase the quantity of native tree and shrub species, with the removal of invasive exotics such as Rhododendron, Laurel and Bamboo would increase the ecological value of the site, although it is appreciated that this may be resisted by local residents who use the wood and value its more ornamental qualities.</p>
BrePLOW6	Shenfield Common	<p>The common (actually no longer a piece of registered Common Land) is clearly popular as a place for local informal recreation, experiencing woodland wildlife and popular activities such as feeding the ducks on the large pond. However, there are several other woods nearby (e.g. Thorndon Country Park) that better fulfil the role of accessible natural woodland greenspace and so this criterion has not been applied to Shenfield Common.</p> <p>The true potential value of Shenfield Common lies in its origin as a large tract of rough, open and probably heathy grassland. As recently as 1920, the common was largely open, with a scattering of trees at the southern end but since then it has tumbled down to species-poor oak woodland. In places within the ground flora, traces of the acid grassland vegetation can still be seen. Public opinion would probably resist the complete clearance of this recent woodland cover to restore heathland. However, this is an Essex and England BAP habitat and the restoration of a more open canopy, to create a parkland habitat under which acid grassland and heathland can flourish once more ought to be achievable.</p>
BrePLOW7	Brentwood Community Hospital Wood	<p>The majority of this wood has its origins as recent woodland and plantation associated with the parkland estate of Middleton Hall, now a school lying to the west of the wood. By the 1950s, housing was starting to encroach on the previously open countryside and the first signs of woodland growth are apparent (from old Ordnance Survey maps). The ornamental origins of the wood probably account for the abundance of Laurel (<i>Prunus laurocerasus</i>) in the understorey, whilst the canopy is dominated by Pedunculate Oak (<i>Quercus robur</i>). Other ornamental introductions include Sycamore (<i>Acer pseudoplatanus</i>), Beech (<i>Fagus sylvatica</i>), Yew (<i>Taxus baccata</i>) and Spotted Laurel (<i>Aucuba japonica</i>).</p> <p>The status of this wood is similar to Hampden Wood (BrePLOW5) – it is a useful and no doubt locally valued pocket of urban woodland but is not of a sufficient standard to currently merit full LoWS status. If its use as an educational or recreational resource is enhanced, along with improvements to the composition (shifting the balance away from exotics such as Laurel) then this site might qualify for full LoWS status under the accessible natural greenspace criterion. Protection and enhancement of woodland.</p>
BrePLOW8	Button Common	<p>This Site forms part of a Registered Common (CL 82) and effectively comprises part of the ancient village green complex for Herongate. Such pieces of land were typically spared agricultural improvement during their communal use but in recent decades nutrient enrichment has brought about a change in the floral composition of this Site. This may be associated with hay cropping, although it appears the site is still occasionally used for public events, echoing its traditional use.</p> <p>Realising the potential of this ancient grassland site may depend on the viability of the residual seed bank in allowing the recreation of species-rich grassland and also control over management practices to promote a flower-rich sward once more.</p>

BrePLoWS9	Hutton Hall Meadow	This is thought to be a piece of old grassland, once used as a venue for village social events and a former Rabbit warren associated with the adjacent Hutton Hall. However, it now lies unmanaged, with a rough grassland sward and an ever-increasing amount of scrub growth. In order to get this grassland back into good condition, management needs to address soil nutrient enrichment, the need to cut or sympathetically graze the site and the control of scrub. However, the presence of reptiles and important invertebrate populations may also be an issue, which should be subjected to appropriate survey work prior to establishing a new management regime.
BrePLoWS10	New Bladen's Wood	The 1839 parish tithe map for Ingrave shows this strip to be wooded, raising the possibility that this woodland site is a lot older than it currently appears. Today, the canopy comprises relatively young planted broadleaved standards, with no trees of any great age present. Regardless of its past history, as the current woodland canopy matures, along with diversification of the understorey/scrub layer, this Site should develop into a useful link between Bladen's Wood, Primstock and Little Bladen's Wood, all of which are thought to be ancient.
BrePLoWS11	Green Meadows	This rough grassland site appears to have lain fallow for well over 20 years and is now succumbing to scrub invasion. Sites such as this can develop significant reptile and invertebrate populations and appropriate survey work would be desirable to help quantify this potential interest. Significant Protection and Enhancement

Ancient Woodlands

- 14.41 Ancient woods are considered our richest land-based habitat for wildlife. They are home to more threatened species than any other. Because they have matured and slowly changed over such long timescales, ancient woods have unique and special features. Their soils remain relatively undisturbed by human activities, keeping layers laid down over centuries of falling leaves and providing a home for hidden communities of fungi, invertebrates and dormant seeds. A closely-knit network of plants and animals, some of which are rare and vulnerable, also depend on the stable conditions ancient woodland provides².
- 14.42 The Woodland Trust has identified a number of proposed Local Plan development sites which may have an impact on ancient woodland and will require substantial protection. These include:
- Arnold's Wood Complex
 - Barrack Wood / Donkey Lane Plantation
 - Hobbs Hole
 - Clement's Wood
 - Codham Hall Woods

These sites are also LoWS.

Geological Assets

² Information reproduced from the Woodland Trust.

- 14.43 Brentwood has a small range or local geological assets which are detailed below in Figure 14.8. This information has been reproduced from GeoEssex.org. There are no Local Geological Sites or geological SSSIs.

Figure 14.8 – Other Geological Sites

BRENTWOOD. Former pit of Brentwood Brickworks (TQ 586 932)

Classic site in the London Clay/Claygate Beds that has produced a large number of fossils since the 1920s, many of which are now in London's Natural History Museum. It has been cited in numerous scientific papers. It ceased working and became overgrown in the 1980s and is now occupied by an industrial estate. The steep sides of the pit can still be seen but no access is available. An historical site only.

BRENTWOOD. Harts Wood (TQ 603 923)

Potential exposures of Warley Gravel and Bagshot Sand. Exposures may be available in ravines or stream banks.

BRENTWOOD. Thorndon Country Park (includes Little Warley Common) (TQ 604 915)

Thorndon Country Park has some interesting landforms which enable the geology to be appreciated. To the south a spread of glacial gravel is dissected by several streams, which have cut through the Claygate Beds exposing the underlying London Clay. Glacial gravel is well exposed in a gravel cliff at the east end of the park with a signboard explaining the geology. A smaller exposure of glacial gravel exists in a gravel pit at Scrub Hill on Little Warley Common to the west. A geological trail guide is being drafted.

GREAT WARLEY. Coombe Green Sand Pit (TQ 576 904)

In a triangular wood bounded by three lanes is a former sand pit with minor exposures of Bagshot Sand. The pit was visited by the Geologists' Association in 1915 and the director noted that it was very fine sand with a great abundance of the minerals epidote and blue tourmaline.

INGATESTONE. Ingestone Boulders (TQ 6511 9967 and TQ 6511 9959)

Two well known sarsen stones are at the junction of the High Street and Fryerning Lane (TQ 6511 9967), the largest one standing one metre (3'3") above ground. Another stone is situated a short distance away adjacent to the south door of St. Edmund and St. Mary Parish Church in the High Street (TQ 6511 9959). The latter stone stands 90 centimetres (3 feet) above the ground and the church guidebook states that it was originally buried beneath the north wall. Local legend claims that these three stones were once part of a single large boulder but sarsens are extremely tough rocks and there is no sign of freshly broken surfaces. They were undoubtedly separate finds; glacial erratic boulders ploughed up from local fields or more likely excavated from the local gravel pits around Fryerning and brought to the town centre for practical or religious reasons.

KELVEDON HATCH. The Coppice (TQ 573 991)

This public woodland has minor exposures of Warley Gravel and Bagshot Sand in the valley sides.

NAVESTOCK. Millennium Stone (TQ 5460 9613)

A giant boulder of ferricrete sits on a concrete plinth by the road. It is 2.1 metres by 1.5 metres (7 feet by 5 feet) in size and was placed here in 2000 to mark the Millennium. It was excavated from a nearby field.

SOUTH WEALD. Langtons Gravel Pit (part of Weald Country Park) (TQ 577 947)

The former gravel pit at Langtons is a classic geological site that has been cited in numerous scientific papers for over a century because of the former exposures of the 'Bagshot Pebble Bed', the origin of which is controversial. The Bagshot Pebble Beds is at the junction of the Bagshot Sand and the overlying Warley Gravel (also known as Stanmore Gravel or 'pebble Gravel'). No gravel is currently visible and this is an historical site only. The former pit is occupied by Langtons Pond.

KEY ISSUES

- 14.44 Summary of key resultant issues for Green Infrastructure planning:

- Consider measures to protect and positively support degraded SSSI.
- Important to protect and enhance LoWS – maintenance issues to be included within GI cost programming.
- Consider designation of potential wildlife sites – particularly sites within close proximity to Local Plan allocations.
- Introduce additional protective measures for ancient woodland to ensure development sites do not adversely impact on sensitive environments and introduce appropriate mitigation measures.

GREEN AND BLUE CORRIDORS

OPPORTUNITIES

- 14.45 This part of the chapter focused briefly upon the opportunities of green and blue corridors. Within the context of the Brentwood Borough this relates to:
- Road and rail corridors where there is opportunity to promote wildlife and habitat connectivity to the wide green grid;
 - Watercourses – established and new
- 14.46 Brentwood is well served by rail lines and connectivity. Organisations such as Network Rail have been working in partnership with Highways England, Natural England and The Wildlife Trusts through the Green Transport Corridors project to forge new approaches to managing the transport ‘soft estate’, to improve safety and performance on the network and benefit wildlife. Working towards net positive biodiversity is one part of this.
- 14.47 The Green Transport Corridors project feeds into the work of the Linear Infrastructure Network, which has set out how incorporating green infrastructure into linear infrastructure.¹
- 14.48 There are clear opportunities to make better use of Brentwood’s rail and road infrastructure to support wildlife and link to the wider infrastructure network.
- 14.49 It is recognised that rivers, streams, ditches and wetland support a diverse range of plants and animals. This includes marginal and bankside vegetation as well as instream features. Rivers and streams often provide a wildlife corridor link between fragmented habitats.
- 14.50 The Borough forms the headwaters of four key watercourses which drain the area: the River Wid, the River Ingrebounre, the River Roding and the River Mardyke. There are opportunities to enhance these blue infrastructure features as part of a wider Green Infrastructure strategy.
- 14.51 The proposed Dunton Hills Garden Village site includes water features (natural and man-made) as well as a natural stream. This is a key opportunity site to maximise linear blue and green infrastructure opportunities.
- 14.5x **Protected Lanes**

¹ Section Information obtained from <https://www.networkrail.co.uk/communities/environment/sharing-railway-wildlife/managing-habitats-railway/>

OUTDOOR SPORTS

OPPORTUNITIES

14.52 For information on outdoor green sports infrastructure, please see the Sports Chapter of the IDP.

14.53 This section of the IDP will be updated in due course.

AMENITY GREENSPACE

OPPORTUNITIES

14.54 The current Replacement Local Plan, lists sites within the Borough with the designation 'Protected Urban Open Spaces'. These are sites which have special protection from development. The Plan text reads: -

"Within the built-up areas of the Brentwood Borough, permission will not be granted for development of land allocated on the proposals map as Protected Urban Open Space or other previously undeveloped land."

14.55 This designation covers locations which are variously classified under different headings (for example play pitches). There are also smaller areas within housing estates (particularly Council estates) which have a similar classification and are used for informal recreation.

14.56 A further audit is required of these sites as part of the Green Infrastructure database. There may be opportunities to introduce environmental enhancements to various designated sites.

ALLOTMENTS

OVERVIEW

14.57 The National Allotment Society provides a definition of an allotment as:

*‘an area of land, leased either from a private or local authority landlord, for the use of growing fruit and vegetables. In some cases this land will also be used for the growing of ornamental plants, and the keeping of hens, rabbits and bees. An allotment is traditionally measured in rods (perches or poles), an old measurement dating back to Anglo-Saxon times. 10 poles is the accepted size of an allotment, the equivalent of 250 square metres or about the size of a doubles tennis court’.*¹

If an allotment is on land owned by a local authority then it will either be classified as a statutory or temporary site. Statutory sites are protected by the Allotments Acts, in particular the Small Holdings and Allotments Act 1908.

14.58 Government has also set out the importance of allotments in updated guidance on allotment disposal, stating that allotments are valuable community spaces that provide people with the opportunity to enjoy regular physical exercise; meet new people in their neighbourhood; and benefit from a healthier diet, regardless of income. Therefore, there are many legal and policy safeguards in place to make sure that their disposal is properly and thoroughly handled by the Secretary of State.² National planning policy also highlights the role that allotments can play in enabling and supporting healthy lifestyles (NPPG para 91c).

14.59 Councils cannot dispose of statutory allotment land without the Secretary of State’s consent. Section 8 of the Allotments Act 1925 states –“Where a local authority has purchased or appropriated land for use as allotments the local authority shall not sell, appropriate, use or dispose of the land for any purpose other than use for allotments without the consent of the Secretary of State”.

¹ <https://www.nsalg.org.uk/allotment-info/>

² Department for Communities and Local Government ‘Allotment disposal guidance: Safeguards and alternatives’ January 2014

EXISTING ALLOTMENTS AND STANDARDS

- 14.60 The National Allotment Society has recently indicated that some 90,000 people are in the queue for an allotment around the county, with some expected to wait as long as 40 years for a plot.³ The PLC report on Sport, Leisure and Open Spaces, indicates that the national under-provision is echoed by comments by Brentwood allotment holders that they have a waiting list for plots equating in total to between 8% and 10% of the total plots currently available⁴.
- 14.61 There are no currently nationally adopted standards of provision for allotments. The old Planning Policy Guidance Note 17 (PPG17), referred to a standard of 0.2ha per 1000 population for allotments. The National Society of Allotment and Leisure Gardeners (NSALG) recommends a standard equivalent to 0.23ha of allotments per 1000 people.
- 14.62 Allotment sites owned by local authorities can be designated as 'statutory' or 'temporary' where 'statutory' sites are subject to some protection under the Allotments Act 1925.[107] 'Temporary' sites have no security beyond the usual planning system requirements. As a result of these differences, the designation of a site is important to local authorities and allotment holders alike. The Council is currently undertaking work to clarify statutory and temporary status sites within the Borough.
- 14.63 It was reported in the PLC report on Open Space, that within the Borough there are a total of 15 allotment sites providing approximately 770 plots of various sizes totally 12.57 ha, which translates to approximately 163 sqm per plot, below the standard allotment plot measure of 250 sqm. Or alternatively, the Borough contains the equivalent of 503 standard plots in total. The below standard level of plot sizes arises from a number of factors, including popular sites where standard plots have been subdivided to help reduce waiting lists or where site boundaries and shape make exact division impractical.
- 14.64 It is considered that the PLC assessment is potentially an under-estimate of allotment sites and the figure of total hectarage is potentially closer to circa 16-17ha. Further information on allotment calculations is included as Appendix x.
- 14.65 Based upon a Borough population of 73,601 (2011 Census), and 16ha of allotment land this equates to circa 4600 people per hectare of allotments or 0.22ha of allotments per 1000 people, which is broadly on par with the old PPG17 standard and NSALG recommended standard.

³ <https://www.telegraph.co.uk/news/2018/08/11/allotments-way-life-not-plot-land-says-national-society-battle/>- the demand for 90,000 plots is above the current 330,000.

⁴ Ploszajski Lynch Consulting Ltd (PLC) Sport, Leisure and Open Space Assessment Final Report August 2016.

IMPLICATIONS OF GROWTH

- 14.66 The Local Plan and associated housing-led allocations will lead to an increased population and there will be a need to consider options to link development with appropriate levels of green, open space and recreational infrastructure. Within the current mix and range of allotments further engagement work is required on understanding whether the current allotment infrastructure have opportunities to accommodate additional growth - estimated to be about circa 1ha (see Figure xx below) of potential need on the basis of population projections linked to none strategic sites.
- 14.67 As the Council undertakes further work on clarifying the legal status of allotments, it makes sense to establish a comprehensive database, review capacity and expansion options and collate a list of allotment improvement requirements. It is understood that a small number of allotments scored fairly-low in the historic work by PLC on facilities.
- 14.68 In relation to large and strategic housing allocations, opportunities may be available to provide new allotment space as part of the green infrastructure mix for particular developments. The development of new allotments will not only require the supply of cultivatable land, but also the provision of main water, car parking and security measures, such as fencing. Figure 14.9 below provides a headline assessment of additional allotment land requirements and selected strategic sites, using standard size plots, recommended standards per 1000 population and estimated development derived population growth.

Figure 14.9: Potential Space Requirement – Allotment Land

Site Allocation	Population Forecast ⁵	Ha requirement ⁶	Plots ⁷ (rounded figures)
All	17,040	3.92ha	157
Dunton Hills Garden Village	8,400	1.93ha	77
Officer's Meadow and Surrounds	1980	0.46ha	18

⁵ Dwelling forecast x 2.4 people per dwelling (Census 2011).

⁶ Population estimate divided by 1000 x 0.23

⁷ Ha requirement x 10000 divided by 250sqm (standard allotment plot)

West Horndon Industrial Estates	1392	0.32ha	13
Warley Depot and Ford	1135	0.26ha	10
Other Locations	4133	0.95ha	38

FINANCIAL CONSIDERATIONS

- 14.69 If allotments are provided on site as part of a development, developers should pay for the future maintenance and management of the allotments and arrange for a management body to undertake that responsibility indefinitely. Where, land is transferred to the Borough or parish councils an agreed maintenance contribution should be made. It is expected that the developer will maintain the allotment for twelve months before it transfers it to the Borough or relevant parish council with the payment of a commuted sum to cover 20 years maintenance. Developer contributions for off-site provision could include the enhancement of nearby allotment facilities.
- 14.70 Part B of the IDP includes further detail on estimated commuted sums for maintenance of potential new allotments.

Churchyards and Cemeteries

KEY HEADLINES

14.71 Churchyards and cemeteries play an important role in the provision of greenspace within often congested urban environments. Their GI role tends to relate to wildlife / habitat promotion, quiet contemplation and informal recreation. Figure 14.10 has been developed from data contained within the Open Space Audit and provides an overview of the cemeteries and churchyards within the Borough and an outline 'quality assessment' based upon the entrance, paths / roads, grassed / planted areas, litter bin provision, general tidiness, seating, parking and general access. It provides an initial indication only as to where areas for improvement could be concentrated, particularly focusing upon sites with scores ranging from 0 to 2.

Figure 14.10: Cemeteries and Churchyards Quality Assessment

Location	Quality Assessment - Entrance	Quality Assessment - Paths and Roads	Quality Assessment - Grassed, Planted and Wooded Areas	Quality Assessment - Litter Bins	Quality Assessment - Litter / General Tidiness	Seating	Parking and Accessibility	Average Total
London Road Cemetery	5	5	4	4	4	4	5	4.20
Woodman Road Cemetery	5	5	4	5	5	5	5	4.80
Lorne Road Cemetery, Warley	3	3	3	2	4	2	3	2.80
Essex Regiment Chapel, Clive Road, Brentwood	5	5	5	5	5	5	5	5.00
St Mary's Churchyard, Hall Lane, Shenfield	5	5	5	4	5	4	5	4.60
Herongate Wood - Green Burial Site, Billericay Road, Brentwood	4	4	5	4	5	4	4	4.40
St. Mary the Virgin, Fryerning, Mill Green Road	4	4	5	4	5	4	4	4.40
Priory Church of St	4	4	5	4	5	4	4	4.40

Laurence, Church Street, Blackmore									
St Peters Church, Weald Road, Brentwood	4	4	4	3	5	4	4	4	4.00
Bentley Crematorium and Cemetery, Ongar Road	5	5	3	3	4	4	5		3.80
Pilgrims Hall, Christian Centre	4	4	3	4	4	4	4	4	3.80
St. Edmund & Mary, Ingatestone Parish Church, High Street	4	4	4	3	4	4	4	4	3.80
St. Mary the Virgin Parish Church, Hall Lane, Shenfield	4	4	4	3	5	3	4		3.80
All Saints Church of England, Church Lane, Doddington	4	4	4	3	4	3	4		3.60
St Thomas of Canterbury Church, St. Thomas Road	4	4	3	3	4	3	4		3.40
All Saints Church, Hutton Village	3	3	4	2	5	3	3		3.40
St. Nicholas' Church, Church Road, Kelvedon Hatch	3	3	3	3	4	3	3		3.20
St. Johns Mountnessing , Hall and Church, Old Church Lane, Padhams Green	3	3	3		3		3		3.00
St. Nicholas Church, Brentwood Road, Ingrave, Brentwood	3	3	2	3	4	3	3		3.00
St. Mary the Virgin, Great Warley Street, Brentwood	3	3	3	2	4	2	3		3.00
St. Helens RC Cathedral, Ingrave Road	3	3	3	2	4	2	3		2.80
The Parish Church of Christ Church, Warley,	2	2	2		4		2		2.70

Warley Hill, Brentwood								
St Stephens Church, St. Stephen Close, Ingrave	2	2	2		4		2	2.70
All Saints & St. Faiths Church, Church Lane, Childerditch	2	2	2	2	4	2	2	2.40
St Georges's Church	2	2	2		2		2	2.00
Trinity Church, 49 Coxtie Green Road, Pilgrims Hatch	3	3	1	1	3	1	3	1.80
St Peter's Little Warley Church, Little Warley Hall Lane, Brentwood	2	2	2	1	3	1	2	1.80
The Gospel Hall	2	2	2	0	3	0	2	1.40

