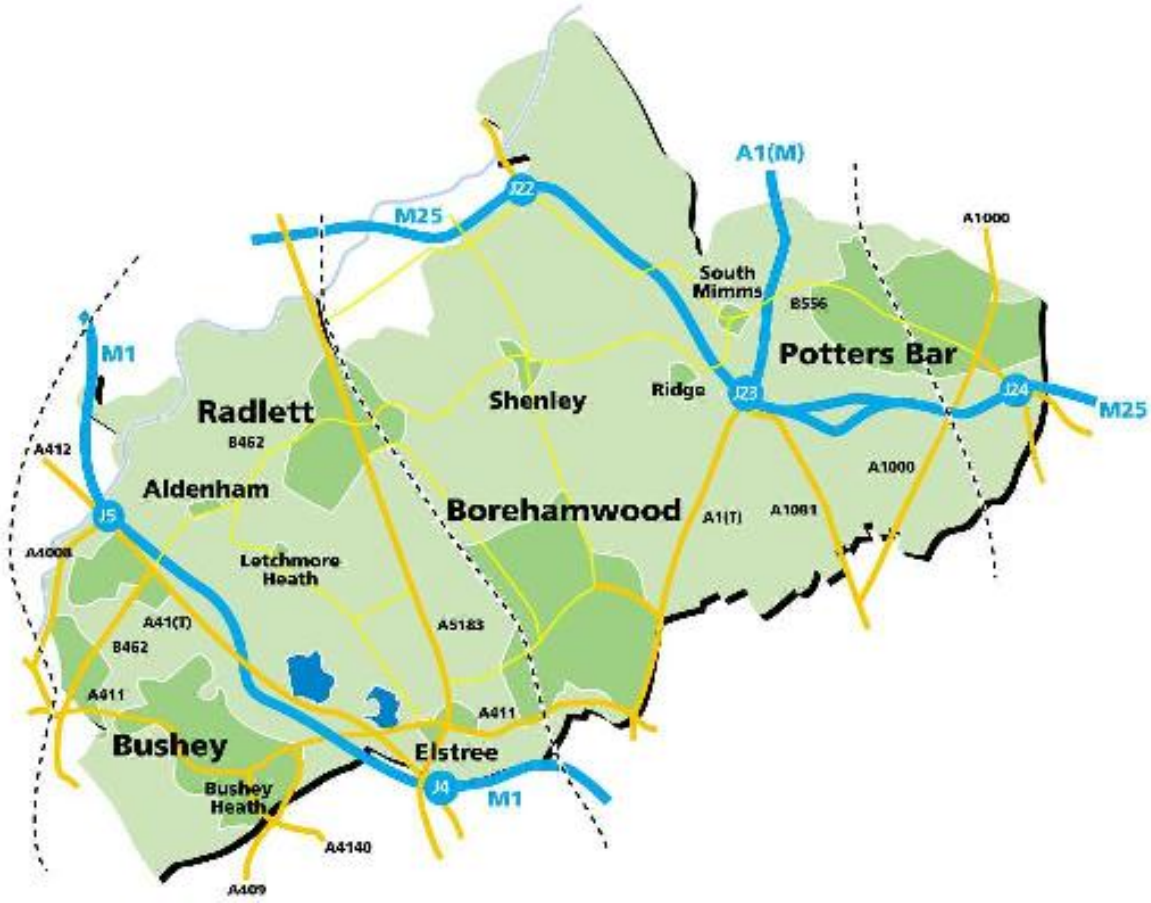
Hertsmere Borough Council

Local Development Plan



Infrastructure Assessment

February 2013

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1. Introduction

1.1 This document identifies what infrastructure is likely to be required to support the population and growth in housing, retail and employment within the Borough up to 2027 for Hertsmere. It includes a review of existing infrastructure provision and plans, such as utilities, schools, health, sports facilities, transport and green infrastructure. This Assessment under its previous title of Infrastructure Topic Paper formed part of the evidence base for the Local Plan Core Strategy (adopted January 2013). The assessment has been updated and will continue to be further updated in the preparation of the Community Infrastructure Levy.

1.2 Discussions have taken place with a variety of infrastructure providers both within the Council, the County Council and external organisations in order to ensure a comprehensive understanding of what is needed. This process has enabled them to think more strategically in terms of future provision and the challenges brought about by significant growth in the long term. This Assessment brings all these agencies plans together in one document. This should encourage inter-relationship between parties and provides an opportunity to share information and possibly infrastructure.

1.3 This document has been written during a time of significant change, with the Government seeking to reform many public services that are responsible for providing and planning infrastructure. This is likely to have an impact on provision, delivery, funding and how the relevant organisations are able to respond in relation to future growth. In addition, it is often difficult to be certain about infrastructure requirements so far into the future, as the detail of many development schemes in not currently known. Therefore, this Infrastructure Assessment is intended to be a document which is regularly updated given the uncertainty and fluid nature of planning for infrastructure.

1.4 The infrastructure planning process should identify, as far as possible:

- Infrastructure needs and costs;
- Phasing of development;
- Funding sources; and
- Responsibilities for delivery.

What is Infrastructure?

1.5 The term 'infrastructure', in this instance, is used in its broadest sense to mean any service or facility that supports the city and its population. It includes, but is not restricted to the following:

Topic	Type of Infrastructure
Transport	Road, Rail, Bus, Travel Management, cycle / pedestrian facilities
Energy gas and electricity	Generation and provision
Water and drainage	Water supply, waste water, drainage, flood defences
Waste	Collection & disposal
ITC	Broadband
Open space / Green Infrastructure	Parks, Children's play areas, Sports pitches and courts, Country parks & Accessible Natural Greenspace, Green public realm, Allotments, Footpaths;
Education	Nursery and pre-school; primary, secondary; further education, higher education, adult education
Health	Hospitals; Health centres/GP surgeries; Public health and prevention
Community services	Libraries, Community centres, Youth , Social services/over-50s/support, police, fire & rescue, ambulance, cemeteries and crematoria, courts, prisons, hostels, places of worship, post offices, Children's centres; special needs and disability
Culture & Leisure	Museum/galleries, Theatres / Venues, Cinemas, Sports centres, Swimming pools, events, festivals and town centre programmes, Markets

1.6 While the term infrastructure is very broadly defined, this does not mean that this topic paper seeks to cover in detail all of the above items. That would make the process unmanageable. This report seeks to give a broad overview of the way certain infrastructure is planned and the agencies involved in its delivery. It also considers where possible the costs and likely funding mechanisms for some items of infrastructure, in particular those that are critical to delivering the Core Strategy.

Purpose of this document

1.7 It is not the purpose of this document to provide a full account of all future infrastructure requirements within the plan period, rather this document

summarises and signposts infrastructure information that was used to inform the production of the Core Strategy. The Assessment seeks to draw upon the conclusions of the substantial evidence base on infrastructure.

Infrastructure Requirements to Support the Core Strategy

1.8 During the production of the Core Strategy, the Council engaged in discussions and consulted key infrastructure providers to ensure that, at this strategic level, plans are in place to underpin infrastructure delivery.

1.9 In relation to the Core Strategy, six key areas of infrastructure provision were considered to be most prevalent:

- Transport infrastructure;
- Education provision;
- Health provision;
- Provision of utilities;
- Green infrastructure and other community facilities; and,
- Emergency service.

Housing Growth

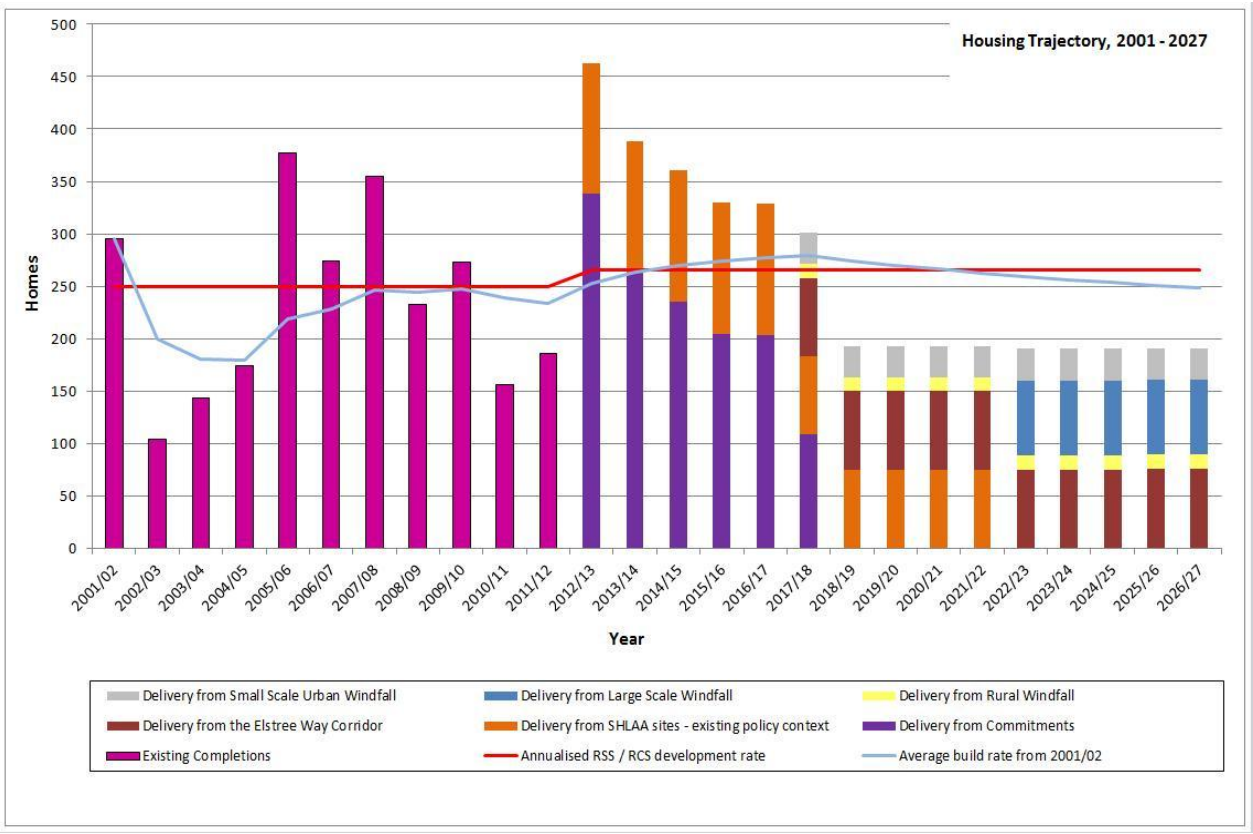
1.10 Within this report housing growth is considered within the context of the Local Plan Core Strategy (adopted January 2013)

Figure 1. Projected Housing Supply in Hertsmere 2012 to 2027

	Allocations and Commitments	SHLAA Sites			Large scale urban windfall (11-15)	Small Scale urban windfall	Rural Windfall (6-15)	Elstree Way (6-15)	Total
		0-5	6-10	11-15					
Borehamwood	521	365	352	0	216	180		800	2,434
Potters Bar, Ridge, South Mimms	118	150	0	0	36	30	52		386
Bushey, Aldenham and Patchetts Green	643	130	46	0	90	75	26		1,010
Elstree and Shenley	28	13	0	0			52		93
Radlett	90	10	0	0	18	15			133
Gross	1,400	668	398	0	-	-	-	800	-
Total Borough (Gross)[1]									**4,056**
Total Borough Net	**1,352**	**628**	**374**	**0**	**360**	**300**	**130**	**752**	**3,896**

The safeguarded sites of Policy H4 of the Local Plan (2003) have an estimated potential of 259 dwellings. In line with national planning policy, the status of safeguarded land, between the urban area and the Green Belt, is required to meet long term development needs beyond the plan period. It is not allocated for development at the present time. Planning permission for development of safeguarded land will only be granted following a review of the Site Allocations DPD (or any other equivalent document) and, until such time, normal Green Belt policy will apply.

Figure 1. Housing Trajectory 2001-2027



1.12 It is recognised that whereas some infrastructure types such as essential utility infrastructure, schools etc are critical to ensuring that sufficient services are available to meet the needs of existing and future residents, there are other infrastructure categories that are more directly related to quality of life and biodiversity enhancement objectives. The Council recognises that whilst it may wish to secure the delivery of all infrastructure items, prioritisation may be required (particularly at the development control stage on applications for development) to reflect development viability, availability of public sector funding sources and service priorities at that time.

Monitoring Infrastructure Requirements

1.13 Hertsmere already undertakes regular monitoring through its Annual Monitoring Report (AMR). It is considered that the most appropriate mechanism for ensuring that infrastructure requirements are regularly monitored will be to incorporate this into the AMR process. It will be important to ensure that there is liaison with the service providers as part of the monitoring process each year.

Collaborative working

1.14 Hertsmere Borough Council is committed to working with infrastructure providers and stakeholders to deliver key developments and projects. This report seeks to capture a snapshot of the infrastructure necessary to facilitate the planned growth in the Borough. During the preparation of the Core Strategy and following extensive consultation with infrastructure providers and key stakeholders, no significant infrastructure barriers have been identified to prevent the planned growth.

1.15 The Council will continue to work with infrastructure providers and stakeholders to refined and provide further information on infrastructure need as it works towards establishing a CIL.

2. Context

The Localism Act

2.1 Following the General Election in May 2010 the Coalition Government announced its intention for local people to be more involved in the future of their areas, under what is termed 'localism'.

2.2 The Government announced that Regional Spatial Strategies were to be abolished to enable local councils to make their own decisions on housing targets. It also provided incentives for development such as the New Homes Bonus and a proportion of the Community Infrastructure Levy to go to Parish Councils. One element of localism would be for local people to prepare a neighbourhood plan for their area alongside the existing system of plan preparation prepared by local authorities. The legislation bringing many of these changes into effect is the Localism Act 2011. Most of the Act's provisions with respect to the planning documents took effect from April 2012. On 3rd January 2013, an Order was laid before Parliament that formally revoked the East of England Plan. This was the first regional plan to be revoked in the country.

National Planning Policy Framework

2.3 The delivery of infrastructure has always been a consideration in the planning system, but became increasingly important with the publication of Planning Policy Statement 12 – Local Spatial Planning (PPS12) in 2008.

2.4 The National Planning Policy Framework (NPPF) was published in March 2012 and superseded PPS12. It sets out the Government's planning policies and how they are expected to be applied. Most of the previous planning policy statements, guidance and circulars have been revoked and replaced by this recently published Framework.

2.5 Planning for sustainable development is a key message set out by the Government in the NPPF. Planning for infrastructure forms a part of this. Paragraph 162 of the NPPF states that local planning authorities should work with other authorities and providers to asses the quality and capacity of infrastructure and its ability to meet forecast demands. Paragraph 162 specifically identifies the following for assessment:

- Transport
- Water supply
- Wastewater and its treatment
- Energy (including heat)
- Telecommunications
- Utilities
- Waste
- Health
- Social care

- Education
- Flood risk and coastal change management

2.6 In addition to the above other community facilities are given importance in the NPPF and linked to the health and wellbeing of communities. One of the Core Planning Principles set out in paragraph 17 of the NPPF states that planning should:

"*Take account of and support local strategies to improve health, social and cultural wellbeing for all, and deliver sufficient community and cultural facilities and services to meet local needs."*

2.7 Hertsmere's Local Plan Core Strategy underwent examination in May 2012 and following amendments was found sound in December 2012. The Inspector found this to be compliant with the NPPF.

Planning Obligations and the Community Infrastructure Levy

2.8 The Planning Act 2008 (as amended) introduced reforms to the Planning System and the introduction of the Community Infrastructure Levy (CIL). The regulations on the implementation of CIL were introduced within the he Community Infrastructure Levy Regulations 2010 (as amended). Local authorities can choose to implement the CIL and will be able to levy a charge on most types of development to help with the costs of infrastructure required as a result of planned growth in the development plan. The concept of development meeting the infrastructure needs in which it is located is not new. However, one of the main differences between the current planning obligations regime and CIL is that CIL does not require a contribution to be directly related to the infrastructure needs arising from the specific development.

2.9 In 2014 the CIL regulations will restrict the 'pooling' of planning obligations to only allowing a maximum of five developments to contribute to a particular item of infrastructure. This will restrict the Council's current practice of collecting a number of contributions and pooling them together and has implications for the tariff approach in the SPD after 2014. Therefore, the CIL approach is likely to be adopted for 'pooling' funds to address the cumulative impact of development. Other planning obligations that would generally be site specific, such as on-site infrastructure for major development, are likely to still be dealt with under the s106 obligation system. The existing Planning Obligations SPD will be updated according to reflect these changes.

2.10 In establishing CIL the Council is required to publish a list of infrastructure projects or types of infrastructure that the Charging Authority intends will be, or may be, wholly or partly funded by CIL, those infrastructure projects or types of infrastructure. The list referred to a the Regulation 123 List is to prevent the Council from 'double-dipping' and collecting both CIL and S106 of spend on the same item of infrastructure.

2.11 This Assessment will provide evidence for the Charging Schedule, in terms of what infrastructure is required as a result of growth. It also provides evidence for current negotiations on s106 planning obligations, it supports the current SPD and will be useful in any future reviews.

Strategic Infrastructure and Local Enterprise Partnerships

2.12 Local Enterprise Partnerships (LEPs) have been set up to promote economic development through a strategic approach to planning, transport and infrastructure delivery.

2.13 LEPs are business-led partnerships responsible for growing the economy and creation of new jobs, whilst also seeking to remove barriers to growth. Hertsmere is covered by the Hertfordshire LEP. The NPPF requires local planning authorities to take into account the need for strategic infrastructure. At this stage these are not fully known. There may be strategic infrastructure requirements identified by the LEP in the future that will need to be taken into account as part of the on-going assessment of infrastructure. The Hertfordshire LEP has identified one of its four sub-groups to specifically look at Strategic Infrastructure. Work on this issue will involve a collaboration of authorities within the LEP.

2.14 Hertsmere Borough Council has a good relationship with Herts LEP and has successfully worked with them in securing Growing Places Fund (GPF) funding to realise development opportunities associated with Elstree Studios, Borehamwood.

3. Transport Infrastructure

Hertfordshire Context

3.1 Transport policies and objectives in the Government framework have been cascaded and refined through the regional and sub-regional planning process to direct transport decisions across Hertfordshire. The *Regional Transport Strategy* (RTS) seeks to manage travel behaviour and transport demand effectively for all, and reduce the rate of road traffic growth to ensure the transport sector makes an appropriate contribution to reducing greenhouse gas emissions.

3.2 Complementary transport policies are confirmed at county level by the Local Transport Plan and its supporting documents, such as the bus and rail strategies. Objectives in the Local Transport Plan (LTP3) for Hertfordshire has now been published, and covers the period 2011-2031. It sets out the transport strategy for Hertfordshire (over the next 20 years), the goals and challenges to be met, and outlines a programme of transport schemes and initiatives (interventions). The various interventions are to be delivered over the short, medium and longer term. The Plan covers all modes of transport - including walking, cycling, public transport, car based travel and freight - and takes account of the effect of transport on wider aspects including the economy, environment, climate change and social inclusion.

3.3 Hertfordshire County Council has led on a joint Infrastructure and Investment Strategy (HIIS) to define infrastructure requirements across Hertfordshire necessary to meet RSS growth targets. The study has assessed Hertfordshire's future infrastructure needs (including transport) and identified funding mechanisms to secure its provision. The report identifies transport as the largest infrastructure item in terms of needs and costs, and there are a number of existing deficits that also need addressing. A HIIS 2 has been produced to consider emerging and adopted housing targets in light of the RSS being revoked.

Hertsmere Context

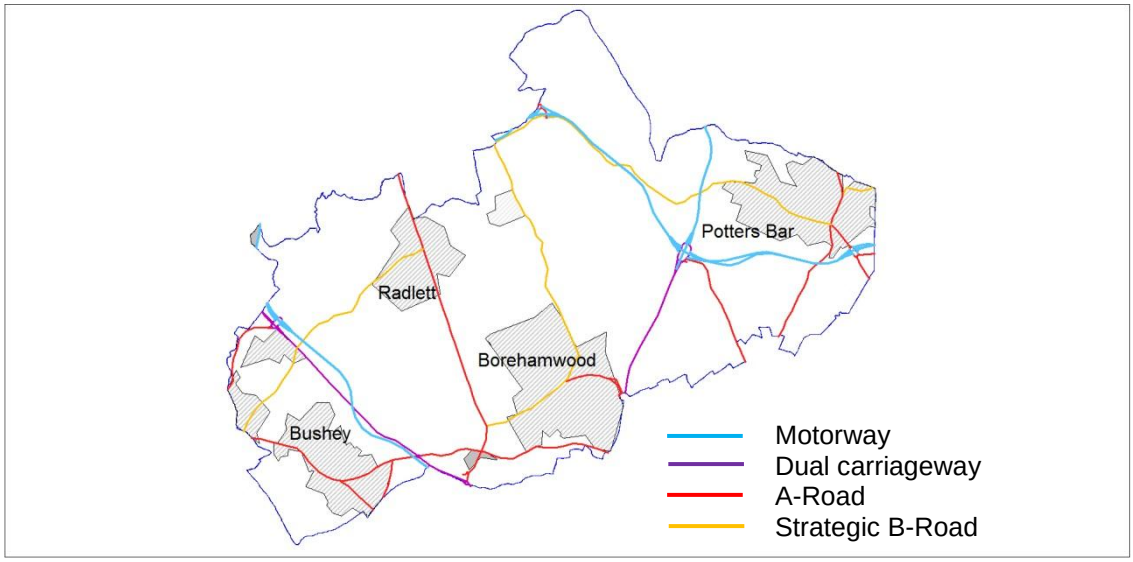
3.4 There are also a number of Transport Studies and Urban Transport Plans which include of cover parts of Hertsmere, these include:

- Elstree and Borehamwood Transport Plan (an update of this plan is currently being consulted on)
- Potters Bar Urban Transport Plan
- South West Herts Transport Plan
- South West Herts Transport modeling – draft
- Borehamwood and Elstree Transport Study (modeling for the Elstree Way Corridor)

- Hertfordshire Infrastructure and Investment Strategy – Transport Technical Report

Road Network

3.5 Hertsmere is well connected to London and the rest of the country. The M25 and M1 motorways and the A1 all run through the Borough, which is also serviced by main line rail services stopping at Potters Bar, Radlett and Borehamwood. However, some problems are caused by road links being better than access to public transport, particularly in terms of east to west transportation, which is reflected in high levels of car ownership and traffic congestion.



Blue motorway / Purple dual carriageway / Red A-Road / Yellow strategic B-Road

Figure 2 – Strategic Road Network

3.6 The Council has undertaken discussions with the Highways Agency, who have considered the relative impact of growth in the sub region is considered. There is broad capacity within the strategic network, especially given the increase of capacity as a result of the current and planned M25 widening.

3.7 The HIIS work also indicates that in 2011 there will be stress on the M1 and M25 without proposed growth, although the M25 is likely to improve as current works to widen the carriageway and provide additional capacity are completed through south-western Hertfordshire. Analysis for HIIS indicated that the AM peak showed the greatest level of stress on the road network and was therefore used as the critical time period to identify transport infrastructure need.

3.8 Widening of the M25 was one of the recommendations of the Orbit Multi Modal Study (DfT) which reported in November 2002. The study was tasked with addressing the problems of the M25 motorway and the orbital

transport corridor around London. The study involved widespread public consultation and looked at the current problems and potential solutions to them. The programme of works between Jct 16 to 23 (see appendix 3 for HA plan) partly fall within Hertsmere and the adjacent districts of St Albans, Three Rivers and Watford. Works between Jct 16 to 21a are complete, the final section of (through Hertsmere) is due for completion ahead of the 2012 Olympic Games.

3.9 As part of the residential-led redevelopment of the Elstree Way Corridor Borehamwood, a detail programme of public realm and highways works are being prepared. The Council is working with HCC and appointed consultants AECOM to prepare a phased scheme of works, to improve accessibility for vehicles, pedestrians and cyclists. The highway proposals will be taken forward within the Elstree Way Corridor Area Action Plan (AAP) a development plan document (DPD) which will guide the area's redevelopment. While full details of the works are get to be determined it is expected that the total costs of the infrastructure works will be in the region of £3.5m-£4m, and will be met through developer contributions via either CIL or S106.

3.10 HIIS has identified Hartspring Roundabout on the junction of the A41/B462 Hartspring Lane, within Hertsmere as a key corridor requiring improvement works to enable future growth by 2021. Hertsmere Borough Council will work with HCC to ensure the delivery of this project.

3.11 Although Stirling Corner, at the junction of the A1 / Barnet Road is located outside of the borough the Council has actively engaged with Transport for London to address safety and accessibility issues at this important junction.

3.12 The LTP3 includes a number of schemes within Hertsmere:

- Stirling Way Pedestrian Improvements (2011/12)
- Brook Road Discretionary Scheme (2011/12)
- Brook Road/Nr Fairway Ave S127 Signal Refurbishment (2012/13)
- Centennial Park S106 - Elstree Crossroads (2011/12)

Rail Network

3.13 Hertsmere is served well by rail connections with the four major centres served by rail connections. Figure 3 below shows the rail network in relation to the settlements in Hertsmere.

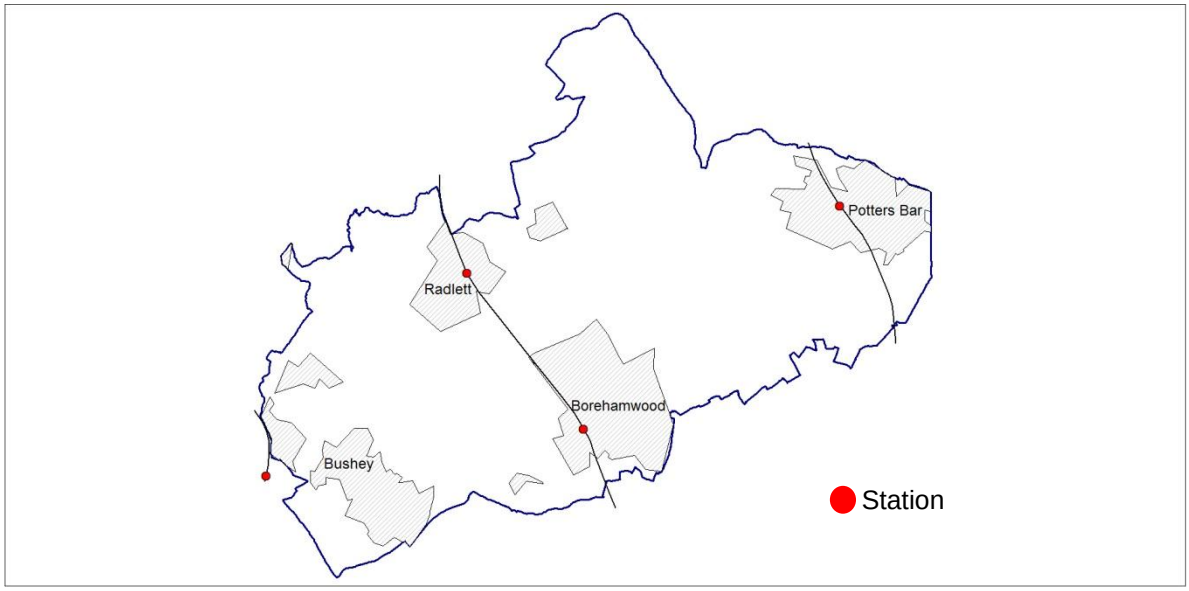


Figure 3 – Strategic Rail Network

3.14 As table 2 below shows Elstree & Borehamwood station is busiest station in term of annual passenger numbers within Hertsmere. Annual Passenger numbers for all stations in Hertsmere decreased in 2009/2010 compared with the previous year. This local decrease is in keeping with the UK average with saw an average decrease of around 0.8% compared to 2008/2009.

	Service Provider (s)	**Annual Passengers - Year**	
		08/09	**09/10**
Elstree & Borehamwood	First Capital Connect	3,274,532	3,025,188
Radlett	First Capital Connect	1,037,944	988,480
Potters Bar	First Capital Connect	1,649,420	1,569,258
Bushey*	London Overground	491,710	533,866

Source: http://www.rail-reg.gov.uk/upload/xls/station_usage_0910.xls
**Station located within neighbouring district of Watford*

Table 2 - Station Service Providers and Passenger Figures

3.15 Elstree and Borehamwood and Radlett are on the Midland Mainline, served by the Thameslink line service currently operated by First Capital Connect. The typical off-peak service from the station is four trains per hour southbound to London, Wimbledon and Sutton, and four trains per hour northbound, of which two terminate at St Albans and two run to Luton. On Sundays this is further reduced to two trains per hour in both directions. Peak services run on to Bedford, with late night / early morning services running to Three Bridges and Brighton. Up to seven trains per hour operate at peak times.

3.16 Potters Bar is located on the Great Northern Line on the East Coast Main Line, services are operated by First Capital Connect. There are two trains per hour to London King's Cross, three trains per hour to London Moorgate, and also three trains per hour to Welwyn Garden City. In addition there is a service an hour to Cambridge, and one an hour to Peterborough. The level of service is reduced at weekends.

3.17 Bushey is on the London Overground "DC lines" between London Euston and Watford Junction and the London Midland services between London and Tring. The London Overground services, Monday to Sunday daytimes there is a train every 30 minutes to London Euston (southbound) and Watford Junction (northbound), this services is hourly at weekends. For London Midland services, Monday to Saturday daytimes the half-hourly service to London Euston and Tring stops at Bushey. The London bound service is more frequent during the morning rush hour.

HIIS

3.18 The main issue for rail in Hertfordshire is that despite having an extensive north-south rail network traversing the County, rail use is constrained by a lack of capacity. A lack of trains to satisfy demand especially for commuter trips into and out of London; platform capacity and accessibility including at London stations; insufficient car parking at some station car parks and limited train paths have contributed to this lack of capacity.

East Coast Main Line (Potters Bar)

3.19 The ECML experiences severe overcrowding in AM and PM peaks on many services. Highest inner suburban crowding levels with significant standing (typically south of Gordon Hill) occurs on AM peak Hertford Loop services. Generally quieter periods for remainder of day. First Capital Connect report that in general there is insufficient parking spaces at a number of stations within Hertfordshire, and is committed to increasing parking capacity across its network. At Potters Bar in 2007, car parking facilities were working at 90% car parking occupancy or higher.

Thameslink (Radlett and Elstree & Borehamwood Stations)

3.20 The Thameslink route is at or near capacity at peak times from London to Bedford. Most heavily loaded trains on London peak commuter services south of Bedford. Performance issues particularly pronounced at locations where route heavily congested. Track capacity is limited south of Bedford and the immediate plan is largely to make better use of existing train paths by running longer trains. For First Capital Connect this has required a move to 12-car trains and has resulted in platform extension work at Elstree and Borehamwood Station. The installation of a new foot bridge and lifts at Elstree and Borehamwood Station is also planned for 2013 under the DfT funded Access for All scheme.

3.21 Commuter growth will continue to be a key issue, especially into London. It is very difficult to create further peak paths to/ from London due to the constraint of four platforms at St Pancras International and number of

paths available through the Thameslink core from Kentish Town to Blackfriars once Key Output 2 of the Thameslink Programme connects with the East Coast Mainline route.

3.22 Current signalling control arrangements on approach to junctions at Radlett, Harpenden and Leagrave has caused local problems, when trains need to cross between the fast and slow lines. Where these are not planned it can incur up to two minutes delay.

3.23 The £5.5 billion Thameslink programme will provide increased capacity and improve journey experience on the line serving Elstree and Borehamwood, Radlett, St Albans and Harpenden. Longer trains on this route will be introduced by 2012. The second phase, due for completion by December 2016 will link the Great Northern line into the Thameslink network, allowing direct services from places such as Stevenage via St Pancras / Blackfriars to the south of London.

Croxley Rail Link

3.24 The Croxley Rail Link is a proposal which includes the construction of a viaduct to connect the existing Metropolitan line to the currently disused Croxley Green Branch Line, with the provision of two new stations. The overall aim of the project is to improve connectivity within Watford and between Watford, London and the rest of the UK, thereby supporting economic development and helping to reduce congestion on the road network. The scheme will serve parts of the Bushey area close to Watford and will provide an alternative route of transport for residents to connect to, especially for access to Watford Hospital. The Croxley Rail Link has received funding and it anticipated to start in 2014/15, with a total project cost of circa £116.3m.

3.25 Hertfordshire County Council is currently developing the designs for the scheme with a view to progressing down the appropriate planning permission channel, known as a Transport and Works Act Order, to gain the necessary powers to construct the scheme. The Transport and Works Act Order for the scheme was submitted to the Secretary of State in early January 2012.

Buses Network

3.26 The role of the bus is largely complementary to other parts of the transport system. It is an inherently local rather than long distance trip provider, though some routes may have a county-wide dimension. It serves a volume market, but needs of individuals and interfaces with individual transport mechanisms such as taxis and community transport are important.

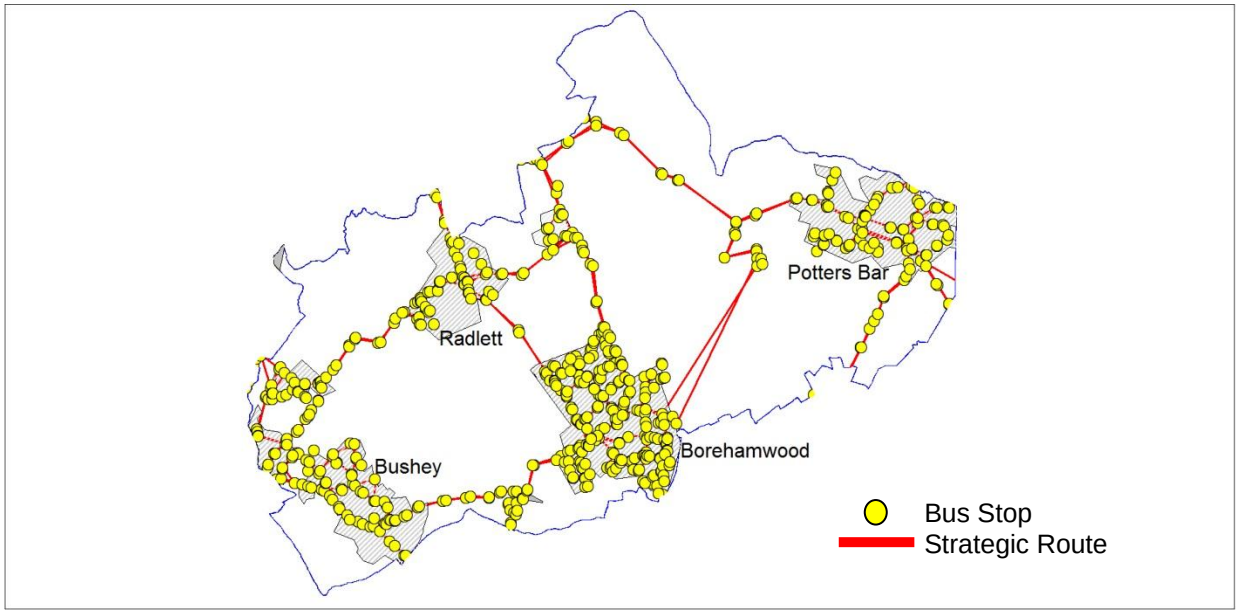


Figure 4 – Strategic Bus Routes

3.27 Bus operators providing regular services across Hertsmere and beyond include Sullivan Buses, Arriva, Arriva London and Uno. The management of public transport services in Hertfordshire (on behalf of Hertfordshire County Council) is led by Intalink, which is part funded by Hertsmere Borough Council. Intalink design, create and promote cross-operator multi-journey tickets and occasionally run competitions. They manage Quality Bus Partnerships maintaining good standards along routes that need it. Along with this, they provide printed timetables, maps, phone apps and leaflets promoting the above services.

3.38 The 2011-2016 Intalink Strategy identifies a series of infrastructure interventions, including a programme to upgrade and improve designs of bus stop infrastructure, including:

- Refurbishment or replacement of bus stop flags to include new design
- Improved display of the new 'traveline' telephone number
- The installation and display of SMS text numbering, to facilitate the delivery of the 'next bus due' details direct to a mobile phone
- Completion and installation of the individual bus stop renaming programme
- Investigation of alternative disability information display at the bus stop
- Improvements for disabled persons, wheelchair users and others, through 'kassel kerb' facilities wherever possible, allowing ease of access from the kerbside to the bus (in progress)

3.39 HIIS identified the following as the main problems in relation to bus network improvements across Hertfordshire:

- Competition from high car ownership and use;
- No dominant centre on which demand for services is focused;

- The impact of London attracting operators and workers in the industry;
- Decline in bus use of 2% per annum since the mid-1990s;
- Bus costs rising by 7-8%, fares rising by 5% per annum;
- An ageing fleet of vehicles; and
- Accessibility for disabled users placing financial costs on operators and HCC.

3.40 The Bus Network Review (a daughter document to HCC's Bus Strategy) provides strategies for 100 bus corridors in Hertfordshire. The 20 bus corridors considered the best candidates for improvements and of these, two routes are within Hertsmere the 306 (former W7/9) (Watford – Bushey – Borehamwood) and 84 (St Albans – Potters Bar – Barnet). The improvements outlined in the strategies are not limited to hard infrastructure but include better vehicles and marketing. Of note is that many of these corridors are inter-urban, reflecting the reality that existing passenger capacity deficits are mainly experienced on inter-urban routes it is of course important to recognise that, to a greater or lesser extent, interurban services will also cater for intra-urban travel.

3.41 The Inter Urban Route Strategy (a daughter document to HCC LTP) provides a strategy for a series of key corridors linking the urban centers within the County and across the borders to neighbouring authorities. The key objectives of this ongoing Strategy are to determine the function of each route, its characteristics, capacity, delays and adequacy / potential to accommodate growth; and, to consider and prioritise interventions within routes and across routes. The Council is currently working with HCC and districts across the County on the Strategy which is expected to be completed later in 2012.

4. Education provision

4.1 Hertfordshire County Council (HCC) has a statutory duty to ensure there are sufficient school places for children and young people resident in the Borough within the state / state funded sector. The Council is to work with the County Council to refine details of education need with the Borough over the coming months. The details provided below are a high level estimation of education requirement based on pupil yield.

4.2 HCC calculates the costs of education by estimating the number of pupils that could be expect from additional residential development to give a form entry (FE) figure. A range of 500 to 850 dwellings per FE is to be used on typical average child yield across Hertfordshire.

Primary Schools

Area	**Requirement:**	**Estimated Cost:**
Borehamwood (2,434 dwellings)	2.9 to 4.9 FE	£11.48m - £19.52m
Potters Bar, Ridge, South Mimms (386 dwellings)	0.5 to 0.8 FE	£1.82m - £3.10m
Bushey, Aldenham and Patchetts Green (1,010 dwellings)	1.2 to 2 FE	£4.76m - £8.10m
Elstree and Shenley (93 dwellings)	0.1 to 0.2 FE	£0.44m - £0.75m
Radlett (133 dwellings)	0.2 to 0.3 FE	£0.63m - £1.07m
Total		**£19.13m - £32.53m**

Secondary Schools

Area	**Requirement:**	**Estimated Cost:**
Borehamwood (2,434 dwellings)	2.9 to 4.9 FE	£9.08m - £15.43m
Potters Bar, Ridge, South Mimms (386 dwellings)	0.5 to 0.8 FE	£1.44m - £2.45m
Bushey, Aldenham and Patchetts Green (1,010 dwellings)	1.2 to 2 FE	£3.77m - £6.40m
Elstree and Shenley (93 dwellings)	0.1 to 0.2 FE	£0.35m - £0.59m
Radlett (133 dwellings)	0.2 to 0.3 FE	£0.5m - £0.84m
Total		**£15.13m - £25.72m**

4.3 The costs outlined above are based on child yield from proposed growth and a simple formula of £4.01 million per FE for primary and £3.17 million per FE for secondary schools.

4.4 In reality the provision of part of an FE is not practical and would not allow for flexibility in planning for schools. Therefore, in some cases the costs are likely to be significantly higher than identified to make up the shortfall in FE provision. In addition, costs will vary depending on whether a school is being extended or built from scratch, whether any land needs to be purchased (the cost of acquiring land has not been included), the specification/design and location. Extending existing schools may also impose a requirement to secure additional playing fields.

4.5 This report has captured a snapshot of the Hertsmere education infrastructure. To deliver the growth of Hertsmere over the next 15 years a 2FE Primary School site is required in Borehamwood. Discussions between the Council and HCC are to continue and potential sites explored as part of the Site Allocation DPD. Current guidance from HCC is that primary schools should ideally meet the following criteria:

- 2.5 Hectares site size
- Sustainably located
- Flat site
- Accessible to pedestrians (less than 2 miles along safe routes) and vehicles
- Free from site constraints

4.6 Further requirements will need to be closely monitored including any impact arising from neighbouring development (particularly in Watford, Three Rivers and St Albans) and changing demographic projections. The Council will also work closely with HCC and Oaklands College to ensure that the College's plans for continued presence in Borehamwood address the needs of the local community.

4.7 In May 2013, Education Secretary Michael Gove approved 102 new free school applications to open in 2014 and beyond. This included the Harperbury Free School which will offer 120 places each year from September 2014. The school will be built within the grounds of the former Harperbury Hospital, off Harper Lane. It is expected that admissions will be from Radlett, Shenley, London Colney and surrounding localities.

4.8 The Elstree University Technical College (UTC) is set to open in Borehamwood in September 2013. Elstree UTC will offer full time technically oriented courses for students aged 14 – 19. The focus of the UTC will be on technical skills, trades, crafts and technologies that support the entrainment, film, television, theatre, visual arts and digital communications industries.

5 Health provision

5.1 As of 1st April 2010, East & North Hertfordshire Primary Care Trust (PCT) and West Hertfordshire PCT merged to create one PCT for Hertfordshire: NHS Hertfordshire. It is responsible for arranging healthcare for everyone who lives in the County. Its healthcare providers include GPs, hospital trusts, dentists, community pharmacists, community health services, and mental health trusts. Four months prior to merging the two Hertfordshire PCTs laid out their joint vision of what services will be commissioned over the next few years in their Five Year Strategic Plan. This Plan seeks to improve health, people's experiences of healthcare, and ensure services are of the highest quality. The Plan was published in 2009 and updated early in 2010.

Policy Context:

5.2 The Revised Core Strategy for Hertsmere highlights that the provision of healthcare is a key priority. The Strategy includes the aim of reducing healthcare inequalities across the Borough by making sure that the facilities are in the most accessible places.

5.3 Health need and deprivation is not uniform across Hertsmere. The Index of Multiple Deprivation (IMD) 2007 demonstrates that the highest rates of deprivation are in Borehamwood Cowley Hill ward. Areas with high deprivation indicators will have a greater need for healthcare provision:

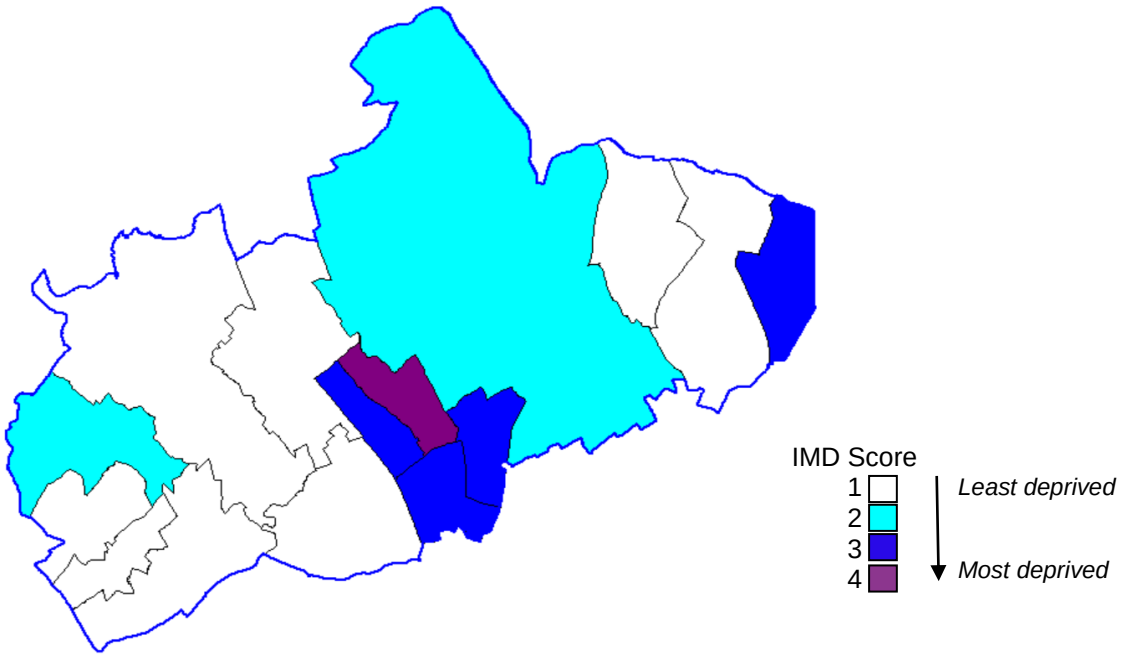


Figure 5 – Index of Multiple Deprivation in Hertsmere

Organisational structure:

5.4 GPs in Hertfordshire have organised themselves into 12 local commissioning groups. These provide a local focus for setting commissioning priorities and advise the PCT on more strategic commissioning matters. Hertsmere Commissioning Limited (HCL) is the practice-based commissioning (PBC) body for Hertsmere. The PBC gives GP practices the opportunity to use funds to purchase or remodel services (including hospital care) for the benefit of patients. This is usually undertaken by several practices coming together to form local consortiums. The PBC is intended to make care more responsive to patient needs and to encourage investment in community-based alternatives to hospital care.

Provision requirement standards:

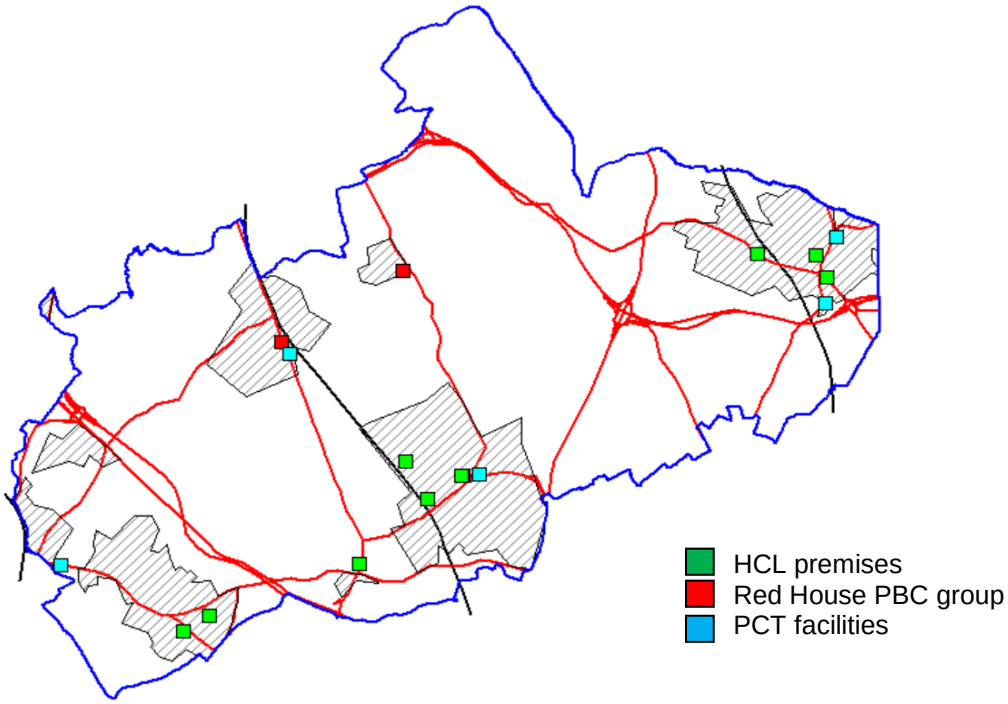
5.5 A commonly cited provision for measuring adequacy of provision and demand for new GP services is 1 Whole Time Equivalent (WTE) GP per 1,800 residents. HCC has assessed current capacity by using a proxy measure to consider both workforce and premises capacity for HCL surgeries. The number of patients per square meter is calculated by dividing the patient list by the floor space figures. This provides a proxy for how crowded a practice is.

5.6 Nationally, the average number of patients per WTE GP has been failing, in part due to investment in new GP premises and staff. It has fallen from 1,815 per WTE GP in 1997 to 1,606 in 2007. However, list sizes of 2,000 are no uncommon across the country and above this level it is considered that rapid access to GPs may suffer and proactive management of patients is more difficult.

5.7 This section will cover both primary healthcare infrastructure in the form of GP provision; and secondary healthcare infrastructure in the form of acute, mental and intermediate services.

Doctors

5.8 There are about 170 GP practices across Hertfordshire according to the *Five Year Strategic Plan*, which should be strategically located to serve the most deprived communities. Three main groups manage GP surgeries in Hertsmere: Hertsmere PBC group (HCL); PCT owned; and Red House PBC. There are ten HCL premises in Hertsmere (green), two Red House PBCs (red), and 5 other PCT owned health facilities (blue).



Map 6 – GP Surgeries in Hertsmere

5.9 The number of patients per square metre of floor space on average is 23, but ranged from 18 patients in the Theobald Centre (Borehamwood) to 39 patients at Annadale House (Potters Bar). Hertsmere has a relatively high number of patients per square meter compared to the average of 21 patients across the rest of Hertfordshire.

5.10 It is also noted that the number of patients per whole time equivalent (WTE) GP can be used to represent demand, where the accepted target is about 1,800 patients. The average number of patients per WTE GP nationally was 1,815 in 1997 and has fallen to 1,606 in 2007. It is recognised that some of the practices in Hertsmere have list sizes of 2,000 patients per GP, and with a situation where there is no scope for the practice to accommodate additional GPs. In these instances it may preclude the practice from contributing further to the growth in the area.

5.11 It is necessary that additional provision is sufficient and appropriate to meet the need and any forecast demographic changes. There are several notable practices where a floor space constraint exists. The 'constrained' sites are measured relatively to other surgeries in Hertsmere.

5.12 Despite these surgeries in the Borough that have limited floor space and therefore growth capacity, access to services can also be measured by the number of appointments given within 48 hours. The smallest of the three surgeries in Borehamwood (Theobald Centre) is constrained due to the available floor space. The annex adjacent to the site, which supplies additional NHS services, is also constrained by floor space. There are two other surgeries in Borehamwood which have a much larger capacity and would not be described as constrained.

5.13 Two out of three surgeries in Potters Bar are constrained by limited access, due to available floor space. These two surgeries at Annadale House and High view both have a well above average number of patients per square metre. The two buildings were both converted from residential dwellings.

5.14 One of the surgeries in Bushey Heath is constrained by its floor space and accessibility rates. However it is noted that there is another smaller surgery close by that was built in 2001 that has capacity in both the respects that the Windmill Street surgery lacks.

5.15 There are two Red House GP practices in Hertsmere, in Radlett and Shenley. Both these practices have above average number of patients per square metre, but do maintain a good access level of 88% of patients getting an appointment within 48 hours.

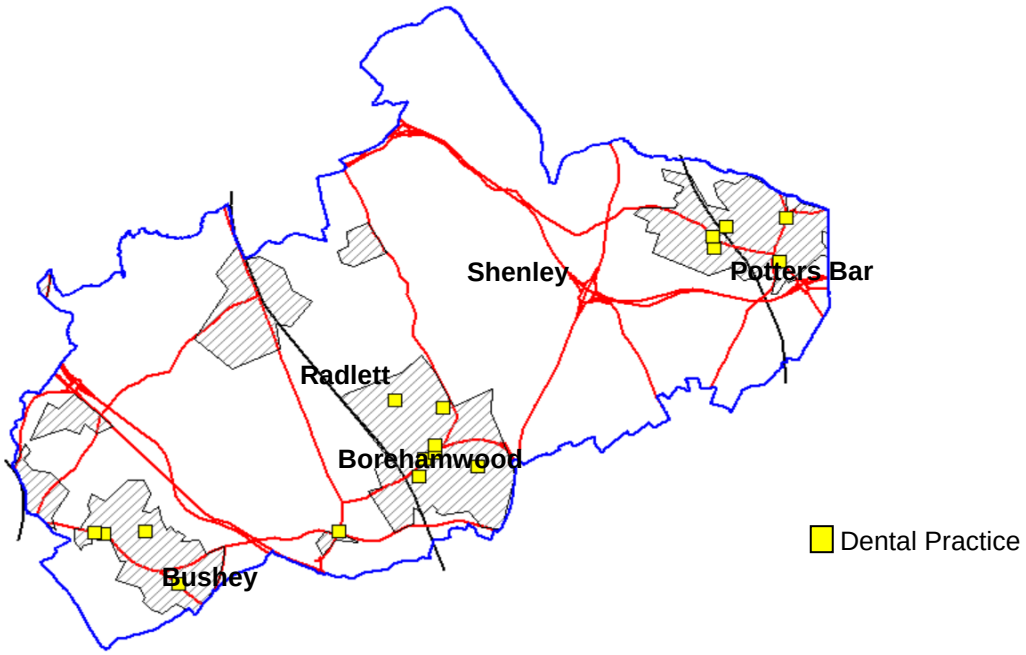
5.16 In conclusion this analysis suggests that the there is a balanced provision of primary care across the Borough. It is noted there is significant capacity in the Borehamwood area within existing HCL premises which has a comfortable surplus. This is considered to mask the moderate shortfall in the Potters Bar and Radlett areas, of up to 800 each.

Dentists

5.17 Independent Dental Practices provide the majority of NHS dental care under contractual agreements. General Dental practitioners are not NHS employees, but like GPs are ‘independent contractors’. The West Hertfordshire PCT area has seen a decline in the number of patients treated in a practice with a new NHS contract. HCC and West Herts PCT recognises that the fall in the number of patients using such facilities is more severe in other part of the east of England, meaning that there continues to be a demand for NHS dental practices in the Hertsmere area.

5.18 The map below shows the distribution of dental practices: there are 8 in the Elstree and Borehamwood; 5 in Potters Bar; and 4 in Bushey. There are many others in neighbouring authorities such as Barnet, Watford and St Albans all within good accessibility of towns in Hertsmere. It should also be noted that the dental practices identified in the map do not include private practices.

5.19 West Hertfordshire PCT has more dentists per head of population than both regional and national averages. This helps support the population in the area, and lessens the demand for patients to go elsewhere for dental care.



Map 7 – NHS Dental Practices in Hertsmere

Hospitals

5.20 Residents can access acute services at hospitals within and outside Hertfordshire. Nearly 98% of Hertfordshire residents live within 30 minutes of an acute hospital by car, based on modelled travel times[2]. There is one NHS hospital in Hertsmere, and it is noted that the PCT runs other premises within each main settlement in the Borough.

5.21 Potters Bar Community Hospital on Barnet Road, Potters Bar, has 29 beds, hold various outpatient clinics, rehabilitation, and palliative, respite and community care. This hospital has a care quality commission rating of 'fair'.

5.22 The DQHH plan has a required level of patient activity reduction. By 2013/14 I is required that the number of elective and day cases, and new outpatients seen at hospitals will reduce by 5,000 (12.5%), and 4,000 (22%) compared to the level in 2008/9 respectively.

The key facilities and agencies relevant to the strategic planning and provision of secondary healthcare in Hertsmere are discussed below:

- NHS Hertfordshire – The Five Year Strategic Plan for this PCT sets out plans for the goals for key strategic areas, including acute centres, urgent care centres, elective care, local general hospitals, intermediate care and shifts to primary care. The plan Delivering Quality Healthcare for Hertfordshire (DQHH) aims to deliver a change, involving the centralisation

[2] Source: Three Rivers District Council Infrastructure Delivery Plan (2010)

of various specialist care services; improved patient experience through better access to services; more care closer to patients home; and improved access to planned care.

- West Hertfordshire Hospitals Trust – The Trust was formed in 2000 following the merger of two separate Trusts, including the Mount Vernon and Watford NHS Trust. Watford is one of the closest hospitals to Hertsmere, primarily serving Bushey.

- The Hertfordshire Partnership NHS Foundation Trust – This Trust provides care for people with mental ill health and learning disabilities. The Trust works in close partnership with HCC and other NHS organisations to promote and support mental health in the community. The Trust provides: acute and rehabilitation services; community services; secure and rehabilitation services; and specialist services.

5.23 Secondary care refers to support provided by a hospital, and is for patients who need urgent or specialist care for a limited period of time. Patients would then normally move back into intermediate care. This type of care also falls in the DQHH plan for the whole of Hertfordshire, which is a complex, rebalance of all services. It is anticipated that there would be a shift in the working patterns of practices to continue to serve the community most efficiently, together with an improvement and modernisation of clinical practice.

5.24 One of the closest of these secondary care facilities is located in Watford, and is an upgrade of the site has been the matter of discussion for some time.

5.25 There are several West Hertfordshire PCT premises near to Hertsmere that all provide intermediate inpatient care services, and were all rated as ‘fair’ on care quality. It is noted that the care home at Windmill House in Everett Close, Bushey closed in 2011, although to date continues to be owned by the PCT. These facilities were transferred to other PCT owned premises, such as those in Watford.

5.26 The following facilities are the closest to settlements in Hertsmere:

- Langley House, St Albans Road, Watford
- St Albans Community Hospital, Waverley Road, St Albans
- Hemel Hempstead Hospital, Hilfield Road, Hemel Hempstead
- Gossom’s End Elderly Care Unit, Victory Road, Berkhempstead

5.27 NHS Barnet and Barnet and Chase Farm Hospitals NHS Trust (within NHS London) are adjacent to NHS Hertfordshire. There are two hospitals near to the boundary between the two hospital Trusts, including Chase Farm in Enfield, and Barnet Hospital in High Barnet.

5.29 Planning for healthcare services is complex and in the absence of a detailed plan or relevant data from the relevant agencies who themselves are operating in a period of considerable change with the on-going NHS reforms, it has not been possible to qualify potential future requirements to serve Hertsmere's population. It is likely that increased in Hertsmere population to 2027 will place additional pressure on healthcare services. This is a nationwide problem, and not just applicable to Hertsmere. The current population of 100,300 is expected to grow to 116,500 in 2028. Within this the proportion of pensioners is expected to rise significantly[3].

5.30 Regarding mental healthcare needs, Hertfordshire Partnership NHS Foundation Trust has anticipated that where there is an excess demand for mental healthcare beds, it would be possible to purchase private beds. This is rarely required however, and a flexible approach is taken in this area of healthcare provision.

5.31 The Hertfordshire Infrastructure and Investment Strategy recognises underlying issues with identifying the needs, costs and funding of healthcare providers, including:

- A lack of identification and definition of long term service needs – each PCT works to a Five Year Strategic Plan. The NHS Hertfordshire plan ends in 2013;
- The difficulty in defining how much is required to meet the aims of the service plan. The HIIS flags £72 million as the cost to support growth in the future. NHS funding operates on a relatively short three year cycle; and
- The complexity of the health system, depending on mainstream funding and organisational structure.

5.32 It is also unclear in PBC (Practice Based Commissioning) service plans where the responsibility for the provision of premises and equipment lies. There is a desire from NHS Hertfordshire and HCL to facilitate the shift of infrastructure delivery away from the hospital sector and into primary care settings. This approach would also match the existing spatial distribution and scale of healthcare provision that Hertsmere currently enjoys.

5.33 It is necessary that the PBC and PCT commissioners engage fully with the West Hertfordshire Trust in exploring the opportunities DQHH will bring. HCC has identified that a need of 33,000 secondary care appointments per annum should be provided for. Breaking that figure down might relate to a total of three full time doctors.

5.34 HCC recognises the need to review the current capacity and the possibility of future demand from 2009 to 2012. The following table represents the bed case supply of floor space provision compared to the worst case demand, based on the Regional targets of housing provision by town:

[3] Source: 2008 – based Sub-national projections for Hertfordshire and Districts May 2010

Area	Worst case demand (patients)	Best case supply (patients)
Borehamwood	1,800 (40%)	8,000
Bushey	1,500 (35%)	350
Potters Bar	700 (16%)	800
Radlett	400 (9%)	0

5.35 This table does not take into account:

- the current condition of the premises,
- their ability to fully utilise all floor space (such as access to upper floors), or
- the ability of patients to travel to register to other practices with capacity.

5.36 It also does not take account of the Revised Core Strategy (November 2011), where a proportion of development is to be focused towards various towns in the Borough up to 2027. It is proposed that 3,550 dwellings will be delivered, which would be comprised as follows:

- Borehamwood – up to 60%
- Bushey – up to 25%
- Potters Bar – at least 10%
- Radlett (and other suitable locations) – at least 5%

5.37 There is sufficient supply in Borehamwood to meet the needs of the future population. There would be a problem in Bushey and Radlett, where the worst case demand exceeds the best case supply of existing floor space in each respective town. However, the forecast housing growth for each town varies compared to the 'worst case demand' calculated by HCC. The Core Strategy proposes that up to 60% of housing development would be built in Borehamwood up to 2027, but the Estates Plan accounts for just 40% population growth to be in Borehamwood. However, the best case supply of healthcare exceeds the 40% 'worst case demand' for Borehamwood. This means that there would be scope for the town to accommodate this housing development increase and the number of additional patients. This would alleviate some of the pressure on demand in other towns in the Borough.

Conclusions

5.38 This report has captured a snapshot of the Hertsmere local health infrastructure. It has reviewed the current capacity in primary care and compared to the planning growth in the Borough.

5.39 The overall picture is of balanced provision, with significant capacity in the Borehamwood area to accommodate surplus after meeting proposed

growth. This is considered to mask the moderate shortfall in Potters Bar and Radlett, and significant gap in Bushey projected up to 2021. The Borough is evenly spread with general and dental practices, and there is good access to hospital provision at Potters Bar and in neighbouring local authorities in West Hertfordshire. It is also noted that the PCTs DQHH plan is to deliver hospital services in a series of smaller facilities in the future, rather than larger sites that deal with the full range of services.

5.40 HCC recognises the nature of proposed development over the coming years. It is important to ensure that secondary healthcare requirement is built to the wider strategic planning and planning obligations process. It is also essential that healthcare providers engage in medium to long term strategic planning. Local and PCT commissioners should also in part focus on agreeing a levy for new development.

6. Provision of utilities

Water

6.1 Drinking, or potable, water for Hertsmere is supplied via a system of pipes owned and operated by Affinity Water.

6.2 To reflect national policies, Affinity Water submit a water management plan to OfWAT, the Regulator, and the Environment Agency, to ensure that economic and environmental aspects are fully considered. Once the process has been reviewed and commented upon, DEFRA ultimately approves the final document. This document serves to determine the capital expenditure that Affinity Water is committed to (for example, to replace existing assets or promote new water resources) as well as agreeing a formula to recover costs from end users.

6.3 Water infrastructure is planned and funded over five-yearly investment programmes. Currently Affinity Water is undertaking Asset Management Plan (AMPl) 5 which is due to end in 2015. AMPl 5 runs from 2010 to 2015, followed by AMPl 6 in 2015-2020 and AMPl 7 in 2020-2025, etc. By implication the scope of this report extends to AMPl 9, concluding in 2035. Detailed data is not available on planned investment on water infrastructure in Hertsmere.

6.4 Affinity Water Management Plan, aims: From the published *Water Management Resources Plan* (2010), and based upon their current forecasts, Affinity Water predict as a whole that the Central Water Resources Zone (WRZ) will have suitable strategic capacity until 2035. This is based upon an assumption that the housing stock will increase by some 25%, the population by some 13% and a climate change impact of some 2.5%.

- **Utilisation :** To make best use of our existing resources through improving and enhancing their performance and by protecting them from pollution as well as continuing to reduce leakage.
- **Metering :** To meter systematically after 2014 to reduce installation costs either when homes have a change of ownership or where water stress is highest or in conjunction with our mains renewal programme, so as to minimise disruption to customers and local communities.
- **Leakage :** After 2014 to continue to reduce leakage by a total of 20 Ml/d over the period to 2030.
- **Water Efficiency :** To offer water efficiency advice and water-saving services to our customers.
- **Energy and Sustainability :** To meter to achieve about 90% meter penetration by 2030 to minimise environmental impacts and greenhouse gas emissions.

- **Tariffs :** Investigate new methods of charging for the future to encourage more efficient use of water, particularly at times of greatest stress.

- **Resource Development :** To maintain a comprehensive programme of studies - working with other water companies - to ensure we can bring forward investment in new resources, should metering and other measures not reduce overall demand sufficiently, should the effects of climate change be more rapid than expected, or to be able to respond to reductions in our resources.

6.5 Affinity Water are obliged to afford suitable water capacity utilising capital expenditure recovery mechanisms permitted via their operational licence issued by OfWAT. This expenditure recovery is partly through customer bills and set by agreed capital expenditure programmes, however there are direct contributions likely from developers that are recovered separate to S106 within the normal planning process.

6.6 It is recommended that as plans develop, Hertsmere should continue to engage with all stakeholders, including Affinity Water and Thames Water, to ensure that dialogue on water provision is maintained.

Sewerage

6.7 The elements of infrastructure covered in this section include physical assets associated with conveying and treating surface and foul water from the Hertsmere area and discharging the treated effluent to watercourses.

6.8 Sewerage infrastructure in Hertsmere is a separate surface and foul water system owned and operated by Thames Water. Thames Water plans for sewerage infrastructure provision across the region as a whole and its published forward strategy covers its entire area of administration. Therefore much of this section of the report presents information for the entire Thames Water region.

Policy Context

6.9 The key policy drivers behind sewerage infrastructure provision include providing for sanitation, prevention of sewer flooding, environmental improvements such as raising effluent quality standards from treatment works to protect rivers; providing new infrastructure to meet the demands of population growth and new office, retail and leisure development; and dealing with increased rainfall intensities due to climate change.

6.10 At national and EU level, major policy drivers will be the Urban Waste Water Treatment Directive and the Water Framework Directive improving water quality standards.

6.11 The UK Water and Flood Management Bill, published in draft form in April 2009, is designed to improve flood risk management in response to the summer 2007 floods. Under the proposed Bill, the council would gain new roles and responsibilities including local flood risk mapping and identifying ownership to resolve flooding problems as they arise, and would have new

responsibilities for drainage. Developers' automatic right to connect to the sewer system under *The Water Industry Act 1991* would be amended and connection would become conditional on meeting new standards including SUDS (Sustainable Drainage System) implementation.

6.12 Although revoked, The East of England Plan highlighted that in parts of the region, existing waste water treatment infrastructure (sewage treatment works and the associated pipe network) operate at the limits of their current discharge consents, and that the scale of investment required suggests that sewerage infrastructure will be a critical delivery issue for the region. Consultation responses to the draft East of England Plan's Policy WAT2 accounted for 31% of all responses, highlighting the significance of waste water treatment issues.

6.13 The East of England Capacity Delivery Strategy Study (December 2006) identifies that the Maple Lodge waste water treatment works (WWTW), which is located in Rickmansworth and serves Hemel Hempstead, requires significant upgrades to meet growth in demand. Together with Rye Meads WWTW in Ware it will treat 12% of the sewage resulting from growth in the East of England region. The report recommends that a strategic review is undertaken to investigate the potential issues around funding availability, which is dictated by OfWAT. The study included a high level gap analysis undertaken by Thames Water examining the Maple Lodge WWTW which concluded that its catchment population would increase by 53,000, or 11%.

6.14 The same report states that Maple Lodge WWTW has insufficient stormwater storage capacity at present within the main works but is supplemented by the smaller Blackbirds facility resulting in adequate existing capacity overall. Final settlement tanks at Maple Lodge are undersized and will require expansion to accommodate future growth. Based on a linear rate of growth the existing discharge consent will be exceeded in 2016 based on the existing regulatory regime. However the Environment Agency is known to be considering tightening the regime which will increase the scale of investment required. Thames Water is undertaking further analysis to determine the investment required.

6.15 According to the Water Cycle Study Scoping Study published by Hyder (April 2010) (For Dacorum, Three Rivers, Watford, Welwyn Hatfield, St Albans), the large scale growth within the Maple Lodge catchment will severely impact the existing trunk sewers as they approach Maple Lodge WWTW. Thames Water will undertake network modelling to understand the implications for sewer flood risk. Significant improvements will be required to either Maple Lodge WWTW or Blackbirds WWTW, dependant on Thames Water's strategy. Further work will be required once current consent levels and development targets are confirmed to develop a waste water treatment strategy for the study area.

6.16 Within the Rye Meads Water Cycle Study calculations suggest that Rye Meads WwTW should be able to operate within its existing volumetric discharge consent limit past 2021. However, upgrades will be needed in this period to increase the existing treatment capacity of the works, to

ensure the required chemical and biological standards of the discharged effluent are met. These upgrades, with appropriate measures, can be implemented without significantly impacting the adjacent Rye Meads nature reserve and the Lee Valley Special Protection Area. For TWU to receive the appropriate permissions and funds for these upgrades, in a timeframe that matches the proposed development, an iterative discussion between TWU, the Local Authorities, the EA and Ofwat is required.

6.17 Under the Water Industry Act, Thames Water have limited powers to prevent connection ahead of infrastructure upgrades, as developers have an automatic right to connect to the sewers system once their development has been granted planning permission. The council will need to consult Thames Water about the phasing and planning of future development within the Maple Lodge sewerage treatment works catchment to ensure any infrastructure upgrades/improvements necessary to serve development are investigated, planned and constructed ahead of occupation. Such upgrades will be necessary to ensure that new developments do not result in sewer flooding or impacts on water quality.

6.18 Sewerage infrastructure will be an important delivery issue for growth in the East of England region. While it is not possible within this report to definitively conclude an assessment of specific infrastructure requirements for Hertsmere between 2011 and 2027, the available evidence highlights that:

- Growth proposed in the Borough and adjoining areas will lead to a requirement for significant upgrades to either Maple Lodge WWTW or Blackbirds WWTW, or both.
- Significant upgrades to meet growth demand given will also be required at Rye Meads WWTW in Ware.

6.19 In the Core Strategy consultation responses Thames Water has stated:

"We are working with local authorities to ensure that upgrades required at Maple Lodge and Blackbirds together with strategic upgrades to the sewerage network are delivered to support growth and would be keen to work with Hertsmere to understand the location, scale and phasing of growth to help inform strategic infrastructure investment."

Energy

6.20 This section reviews the potential implications of residential and commercial development for energy networks, both electricity and gas, in Hertsmere.

6.21 Energy is afforded via a system of pipes or cables which are generally laid under the streets and designed to give regulated pressure requirements and security. In more rural areas, overhead electricity wires are generally used to deliver energy supply.

Electricity

6.22 UK Power Networks is the electricity network operator for Hertsmere and they supply energy via a system of underground cables to each connection required. This was previously undertaken by EDF, however the networks business was sold to the Cheung Kong Group (owners of UK Power Networks) in November 2010.

6.23 For gas, the network operator for the bulk of Hertsmere is National Grid (historically nationalised as British Gas and more recently Transco) with a system broadly similar to UK Power Networks but with pipes as opposed to cables. National Grid have a local management team that look after the gas 'East Anglia LDZ' or Local Distribution Zone. This zone includes major conurbations such as Barnet and Tottenham in North London, Peterborough, Cambridge, Norwich and Ipswich as well as more rural areas.

6.24 Both National Grid and EDF manage their respective strategic networks against the backdrop of a regulatory process that is controlled by OfGEM. This process includes monitoring the success of each operator and those throughout the UK, measuring performance via set criteria. The elements of this success most visible to the general public include quality of supply and security of supply.

6.25 National Grid has a system of mains throughout the Hertsmere area that deliver gas to each connection point. The system operates at medium and low pressure (intermediate and high pressure mains provide the strategic feed8). The medium pressure network distributes gas to pressure reducing stations (PRS) located at various points within the borough and it is at this juncture that gas is subsequently reduced to a lower pressure. This low pressure network is the system that affords most residential supplies and some commercial requirements. For certain installations where gas demand is high (factories / large office facilities), there is however an ability to secure a medium pressure connection.

6.26 The gas capacity within the borough is projected by National Grid to provide sufficient energy without the need of upstream reinforcement, though all utility networks are dynamic and subject to change at relatively short notice.

6.27 UK Power Networks operate a similar system to that of gas in terms of distribution. In essence, electricity for Hertsmere is broadly provided by an 11kV (11,000 volts) network that extends throughout the borough and connects into local substations. The substations subsequently transform the voltage from 11kV to 400V / 230V which is the voltage that is typically utilised in residential circumstances. As with the gas, if there is a large energy user, the connection into the property could be 11kV and not the lower 'residential' value. Commercial applications, such as factories, large office facilities and supermarkets all fall within this category.

6.28 Following a recent overhead line upgrading across the borough, as part of a wider National Grid programme, neither National Grid nor UK Power

Networks have any other plans for infrastructure upgrades in their current action plans.

The Code for Sustainable Homes

6.29 The Code for Sustainable Homes (CfSH) aspires to a decrease in energy consumption via the application of building materials and an encouragement to utilise energy efficient apparatus. As data is not yet available to indicate the impact on CfSH on energy consultation, assumptions will need to be made. For the purposes of the study, no allowance has been made for CfSH. Part of this reasoning is reflected in the balance of certain improvements that the CfSH will bring to that of the wider population who generally aspire to a more affluent lifestyle. See Figure 3-1 for further details.

6.30 That said, National Grid are anticipating a period of negative growth in demand (see below) of up to -1% for the Hertsmere area, due to high unit prices, the pressure to utilise more efficient appliances, the potential impact of the CfSH and a greater shift towards air conditioned buildings amongst other factors.

7. Green infrastructure and other community facilities

7.1 The provision of green infrastructure contribute towards enhancing the quality of life for residents and also to ensuring that accessibility to facilities and open space is improved.

7.2 Green infrastructure is defined as: “The physical environment within and between our cities, towns and villages. It is a network of multi-functional open spaces, including formal parks, gardens, woodlands, green corridors, waterways, street trees and open countryside. It comprises all environmental resources, and thus a green infrastructure approach also contributes towards sustainable resource management.”

GreenArc Strategic Green Infrastructure Plan

7.3 The 2011 Hertfordshire Strategic Green Infrastructure Plan provides an overview of existing strategic green infrastructure assets within the GreenArc; considers opportunities for enhancement and creation of green infrastructure; and, outlines a series of potential projects to deliver multiple. The Woodland Arc project identified within the GreenArc Strategic Green Infrastructure Plan is predominantly within the Borough of Hertsmere. The project seeks to enhance landscape links between Broxbourne Woods and Epping Forest/Hatfield Forest, and strengthen woodland links to the urban fringe, including targeted woodland creation. Funding and implementation is expected to be via a variety of means. The Community Infrastructure Levy will need to be explored as a means of funding.

Community Strategy

7.4 The Community Strategy aims to create opportunities to engage in healthy, active lifestyles. Whilst the major urban settlements do not have complete green corridor networks at current, the Council is in the process of developing a more integrated network through its Greenways Strategy.

Hertsmere Borough Council Green Infrastructure Plan

7.5 The Hertsmere Borough Council Green Infrastructure Plan is a high level plan which identifies further work which will be needed in future to deliver green infrastructure. Where further, more detailed green infrastructure planning work will be required, this is also referenced. The Green Infrastructure Plan for Hertsmere Borough:

- Provides an overview of existing green infrastructure assets within the Borough;
- Sets out an assessment of the ability of green infrastructure to provide multiple environmental and social and in some cases economic functions;
- Considers opportunities for enhancement and creation of green infrastructure;
- Outlines a series of potential projects to deliver multiple functions and benefits, and
- Provides advice on taking green infrastructure proposals forward through spatial planning and practical delivery.

7.6 The Hertfordshire Green Infrastructure Plan incorporates the Council's established Greenways Strategy and identifies six projects within Hertsmere:

- Potters Bar Greenspace Links – Gobions and Northaw Great Wood
- Elstree and Parkland Links
- Catherine Bourne Greenway
- Aldenham and Bushey connections
- Links to the London Loop and London Greenspace Network
- Green Hertfordshire' Interactive map project

7.7 Funding for the implementation of the projects is considered within the plan, a co-ordinated approach is required for each project with potential strategic partners and funding streams identified for each project. Developer funding and capital funding from HCC and HBC is also identified.

7.8 Hertsmere Bought Council will continue to work with its partners to deliver projects, and contribute to the Hertfordshire Strategic Green Infrastructure Group.

Watling Chase Greenways Strategy

7.7 The implementation of the Watling Chase Greenways Strategy (2003) has resulted in the creation of several Greenways routes, involving both new sections and enhancements to the existing rights of way network, as well as cycle routes adjacent to the public highway, over 18,000 metres of route to date. The Council currently holds approximately £500k of S106 funds to facilitate the delivery of the Strategy and has been working with HCC on future arrangements for the delivery of the Greenways Strategy.

7.8 In implementing a network of routes in the Greenways Strategy, there has been a focus on improving links both within and between towns, as well as on improving access to the countryside. Almost the entire Borough lies within the boundary of Watling Chase Community Forest including large areas within the urban fringe between north London and the wider countryside. Continuing to promote opportunities to walk, cycle or ride in the countryside will help increase opportunities for recreation and improving access to the countryside, a key objective of the Community Forest and consistent with the Hertsmere Core Strategy. Funding for Greenways is incorporated into the Council's Planning Obligations SPD.

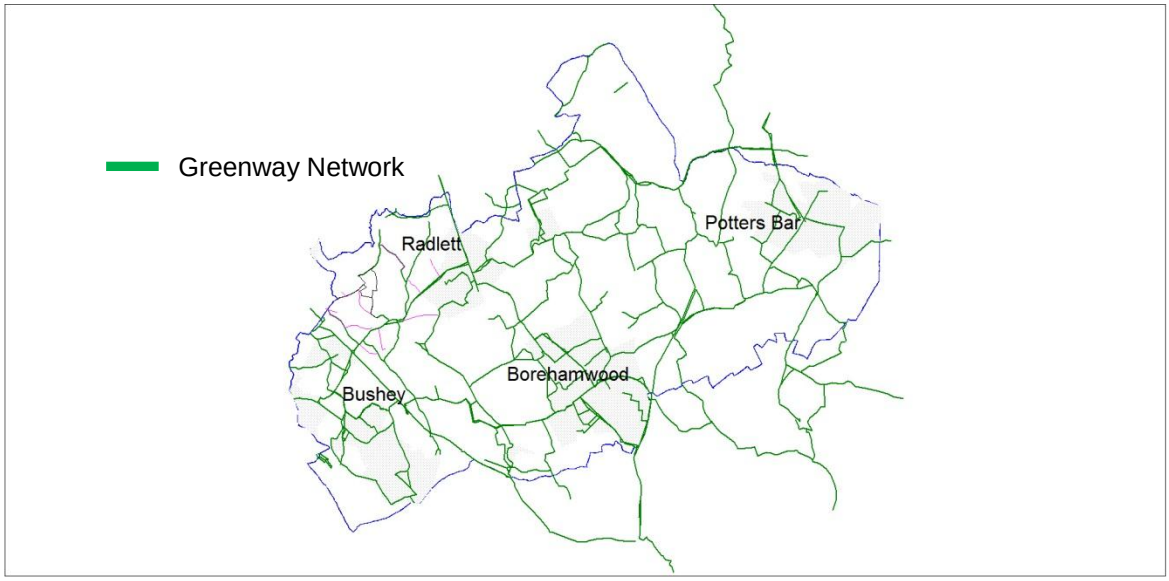


Figure 8 - Hertsmere Greenways Network

Open Space Study

7.9 The 2011 Open Space Study analyses the current provision of open space within Hertsmere. The study evaluates the quantity, and accessibility of open space and recreational land in Hertsmere and recommends appropriate strategy, policy, standards and specific provision required to meet the Borough's future needs. The Study shows that generally Hertsmere has a diverse distribution of different types of open space.

7.10 A review of leisure facilities carried out within the Open Space Strategy identifies that there is no need for additional health and fitness, swimming pools or indoor sport halls provision at the present time or by 2021. A new £30m contract for the running of the Council's leisure centres was recently awarded to Hertsmere Leisure, a registered charity and company managing facilities owned by four different councils.

7.11 There are 11 burial grounds and churchyards, with a total land area of 6.29 ha. The Open Space Study recognised that each individual cemetery has a finite capacity and therefore there is a demand for more space. While there are no sites currently allocated for additional burial facilities, the provision of new facilities is potentially an acceptable use within the Green Belt. The Council is considering potential expansion of its facility at Allum Lane in the future.

7.12 The government has stated that it believes that allotments make an important contribution to the quality of people's lives in our towns and cities, and in creating and maintaining healthy neighbourhoods and sustainable communities.

7.13 The Open Space Study identifies a shortfall of allotments in the following locations in North of Borehamwood, North Bushey, and Ridge and South

Mimms. It is recommended that potential for new sites should be investigated. Funding for allotments is built into the Council's Planning Obligations SPD.

7.14 There may be some need for new indoor tennis facilities in the Borough, however the level of demand stated in this report must be treated as indicative as there is no officially recognised supply and demand model for indoor tennis facilities. Where schools are being redeveloped potential for dual use arrangements should be maximised where possible. The current supply of Community Halls across the borough is deemed as being balanced, but by 2012 it is deemed that there may be an undersupply of 2 Community centres.

7.15 Library provision in Hertfordshire is undertaken by Hertfordshire County Council. In 2005 it embarked on consultation on a new vision and implementation plan entitled, 'Libraries for the 21st Century'. The libraries implementation plan identified that eleven libraries were priorities for replacement. Borehamwood Library was identified amongst the eleven libraries requiring replacement. HIIS also identified the need to replace Borehamwood library citing its poor location and inadequate size for need for replacement.

7.16 A new community centre for Borehamwood, to be built next door to All Saints Church, in Shenley Road, will house a new library as well as a youth facility, museum, a multi-purpose community hall with spaces for training, meetings, internet and conference use. Full planning permission is in place, the funding for the centre has been provided by Hertfordshire County Council, a grant the East of England Development Agency, and from Elstree & Borehamwood Town Council. Construction of this facility recently started and is due for completion in Autumn 2013. The relocation of the Library Service to the new centre is part of wider plans to redevelop the existing site on Elstree Way which forms part of the Elstree Way Corridor Area Action Plan.

Play Pitch Assessment and Strategy

7.17 The Play Pitch Assessment and Strategy includes a detailed assessment of the several codes of outdoor sport, and sought to identify where and when there were any shortfalls in the supply of pitches within sport codes to 2016. The assessment states that:

- Within the Aldenham area there is currently and in the future there is need for two cricket pitches, whereas other sports are adequately provided for. In the Shenley area currently there is a need for a single junior football pitch and two cricket but in reality one cricket pitch would be sufficient. By 2016 there will be a need to create two new football pitches whilst cricket demand will be met by one new facility currently needed.

- In Borehamwood there is an immediate need to provide 2 junior rugby pitches to meet demand now and in the future (assuming that the surfaces can be played consecutively). There is also need for a new cricket pitch

facility by 2016. Whilst in Elstree current demand is for 2 football pitches, rising to three pitches in 2016. One mini-soccer pitch is required in this sub-area currently.

- Current needs within Bushey are for the provision of 2 junior football pitches and 1 cricket pitch (these could be combined on the same area if necessary i.e. 2 football pitches flanking a cricket table). Future demands in Bushey indicate a need for 2 senior football pitches, 4 junior pitches and a mini-soccer pitch. If the current shortfall in cricket were to be provided for, this would also cover the need for an additional cricket pitch in the future.

- Potters Bar currently has a shortfall of 2 mini-soccer pitches, one cricket pitch and a senior hockey pitch. Providing these now should meet future needs in 2016.

7.18 The provision of the shortfall is built into the council's Planning Obligations SPD.

7.19 Following representations from Sport England concerning the methodology of the Open Space Strategy and Play Pitch Strategy, the Council will review these in 2012/13. Potential changes arising from this will be published as an update or superseded in the forthcoming Hertsmere Parks and Play Strategy.

8. Emergency Services

Fire Services

8.1 Hertfordshire County Council (HCC) receives (on behalf of Hertfordshire Fire and Rescue Service) both Central Government grant and Council Tax. Grant funding is increasingly 'reduced' against inflation meaning that any shortfall must come from Council tax. The ability to raise Council Tax is fettered and subject to the capping regime and 'must be substantially below 5%'. There is access to PFI funds for larger schemes, usually those involving major service reconfiguration, though it is understood that a recent potential PFI bid did not come to fruition.

8.2 Unlike infrastructure such as schools, few new developments are large enough to warrant a new fire station or even an extension to an existing one and are, therefore, not delivered by the development process. As Hertfordshire Fire and Rescue Service (HFRS) is part of the County Council and the Council is caught by its floor authority status in terms of borrowing to pay for large capital items, it is unlikely there will be significant funding available to pay for growth unless there is any surplus capital made available in the Council's budget or central government grant available for growth areas can be used. The Consultants are not aware that at this time either exists.

8.3 HFRS is part of the Community Service Directorate of the County Council. The Fire Authority is the County Council. Portfolio responsibility for the fire service rests with the executive member for Community Safety. HFRS is driven by the HCC attendance standards of one fire engine within 10 minutes and the 2nd within 13 minutes and 3rd within 16 minutes.

8.4 The Consultants are aware that there is generally less coverage in the north and east of the County. In particular, the northern areas surrounding the A10 corridor have been identified as a particularly difficult area in which to meet attendance standards. In terms of future requirements relating to new housing and jobs growth, detailed requirements are not known at this stage, as more information on the location, size and timing of future development is required before detailed planning will be undertaken.

8.5 For the purposes of this paper the following information is available from HFRS, although this may be subject to change and should, therefore, be reviewed in due course:

- If Harlow North accommodates 25,000 dwellings then a new fire station to cover the area is highly likely to be required. Should development only total about 10,000 dwellings, there is still the potential need for a retained (part time) station;
- Growth in the north of Stevenage may result in the need for a new station. Stevenage is currently the HFRS' busiest station, so there is limited capacity to deal with new housing growth as a result of workloads as well as attendance times. The identified need is for a new station (either RT or WT) or a relocation of Baldock in conjunction with a new station.

Police Services

8.6 Hertfordshire Constabulary have undertaken an initial assessment based on the proposed development of circa 4,000 dwellings in the period up to 2027 (with approx. 60% located within Borehamwood), the impact on policing is likely to be in the following potential areas,

- Requirement for police surgery to be located within Borehamwood development.
- Need to upgrade 'Airwave' Communication system to improve radio coverage to area (i.e. potential installation of additional communication mast etc.
- Operational requirement to extension existing custody provision within adjoining district to manage potential increase in population.
- Capital funding to adapt/extend existing police station accommodation in Borehamwood (shortly relocating to Hertsmere Civic Offices as you are aware).
- Potential need to upgrade roundabout and associated junction adjacent to Civic Offices in order to minimise impact of increased traffic generation at an already busy junction which if not addressed will impact on operational response.

8.7 The above is not an exhaustive list but gives an indication of infrastructure impacts relating to policing that will need to be considered as part of a proposed development of this scale.

8.8 It should also be noted that the Police & Crime Commissioner for Hertfordshire does not have capital funding provided by Central Government for infrastructure requirements of this type and therefore Section 106 and CIL contributions will be the primary method of funding the 'gap' in provision.

8.9 Based on the limited information currently available it is anticipated that the capital cost of the development proposed is circa £500K. This estimated cost can be updated when further information is available. It should be noted that the above costs/factors will be influenced by the following,

- Dwellings being constructed in accordance with Secured By Design Guidance.
- Associated infrastructure provision .i.e. road network improvements
- Timescale and phasing of proposed development.
- Budget provision over this period allocated to policing.
- Housing type.
- Changes in working practises, Central government initiatives, technological changes etc. in delivering policing over this planning period.

Ambulance Service

8.10 The East of England Ambulance Service NHS Trust (EEAST) provides emergency and unscheduled care and patient transport services in Hertfordshire. There are no specific studies or strategies to identify infrastructure needs as a result of growth in Hertfordshire.

8.11 At this stage the Consultants have, therefore, taken a high level approach to estimating ambulance service infrastructure requirements in the absence of any firm information from EEAST. Existing staff to population ratios are used to estimate new staff requirements based on population increases, with a corresponding new requirement for ambulance stations and vehicles.

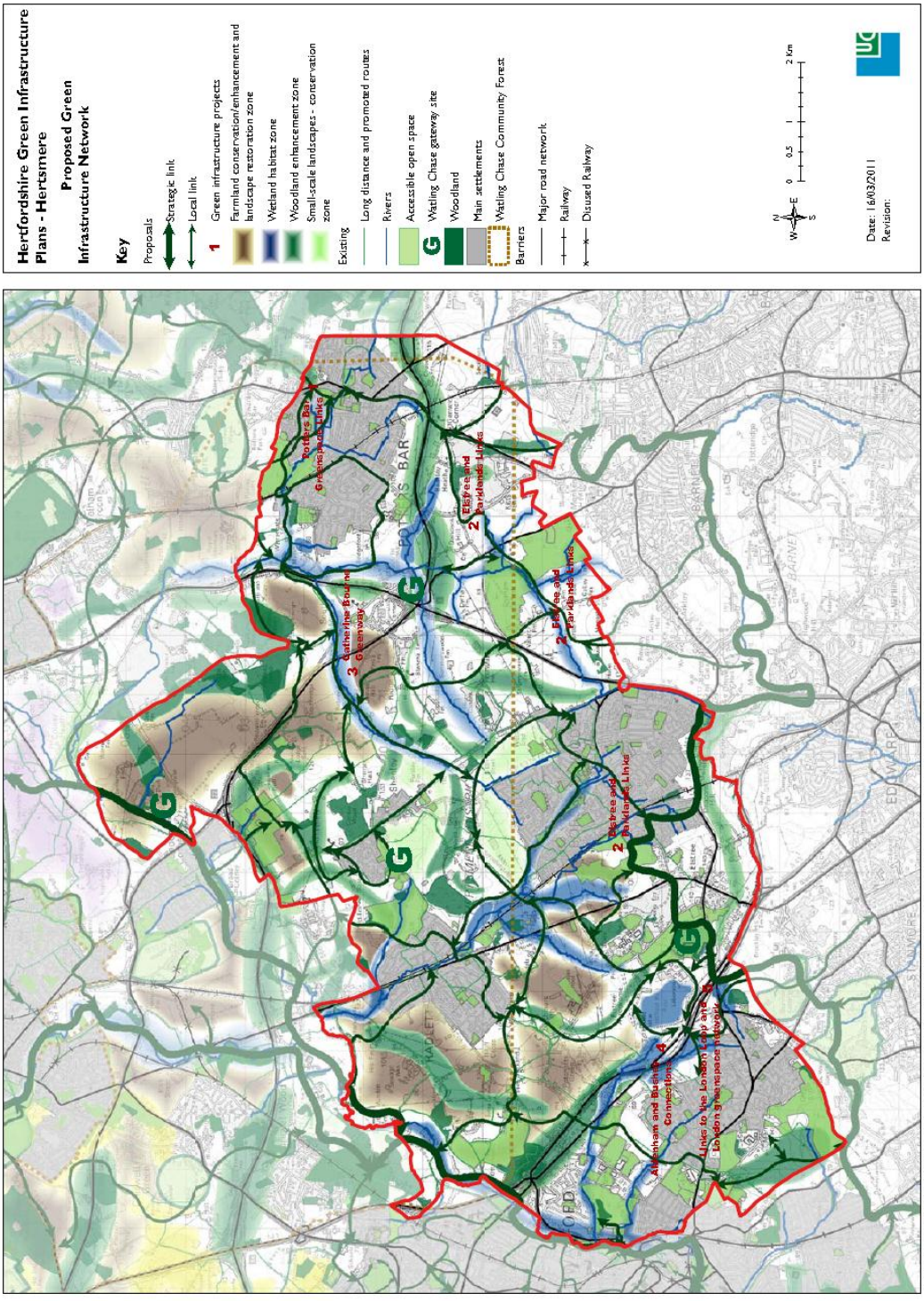
8.12 For the purpose of this paper an ambulance staff to population ratio of 1:1,000, based on the experience elsewhere has been. Based on the population estimated in the new housing growth (200,786), this gives a high level estimation of new staff of approximately 200. Assuming a new station is required every 40-80 new staff (depending on size and location of the station), and a new vehicle (plus equipment) for every 10 new staff, this equates to 2-5 new stations and 20 new vehicles.

8.13 Research commissioned by EEAST has demonstrates that a replacement cost estimation for ambulance stations indicates a cost of £900 per sq m for 'standard' stations and £1,150 per sq m for 'good' stations (including Control Centres). It is understood that a new station for approximately 80 staff and 30 vehicles, costs in the order of £3.5 million.

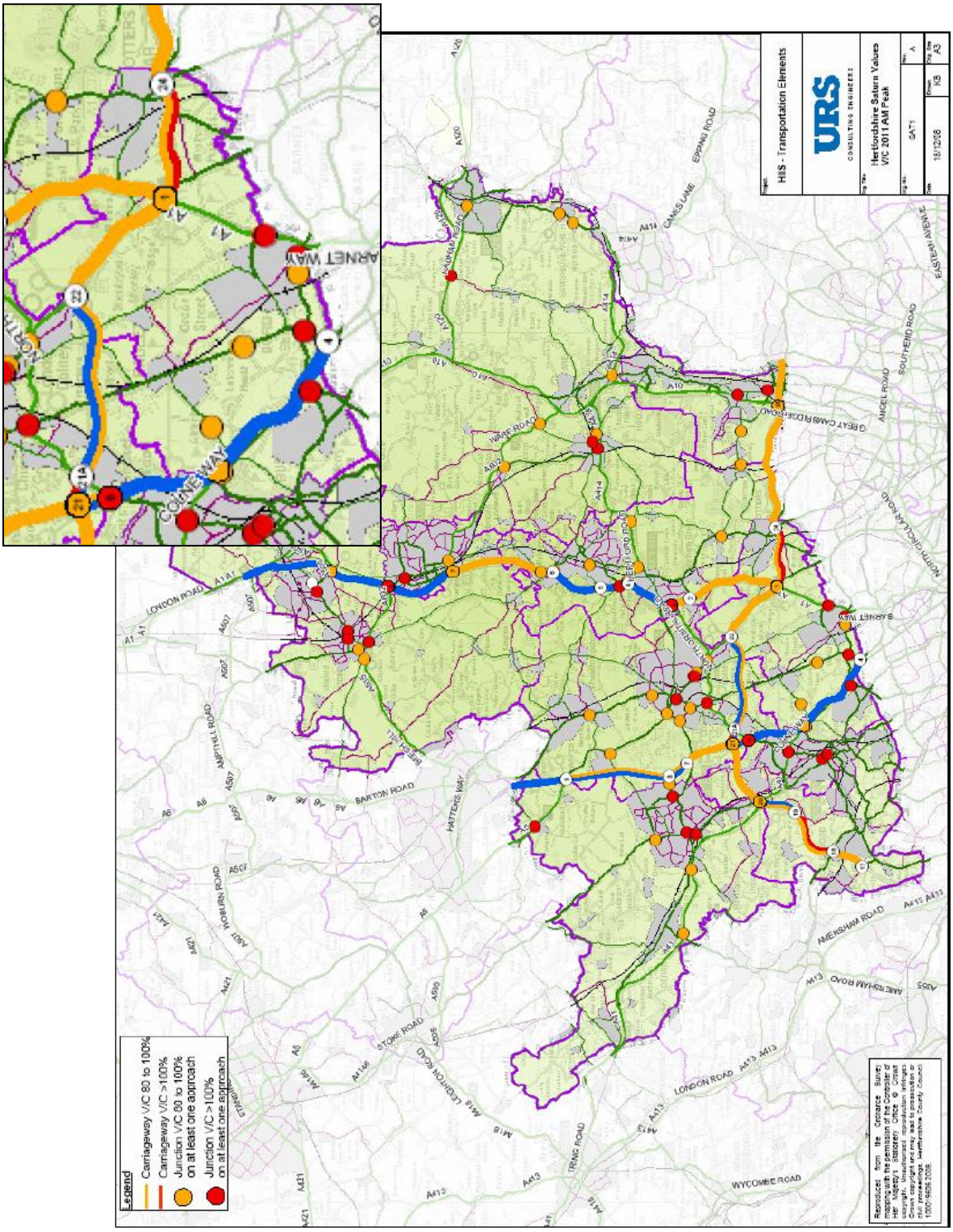
8.14 It has been assumed that a station cost of £2 million on the assumption of an average station staff size of 40 and £135,000 per vehicle. Assuming that five stations are needed at £2M per station, this would cost £10M. Some 20 new vehicles at £135,000 per vehicle would cost £2.7M, therefore, the total cost would be £12.7M.

8.15 In terms of which of the growth locations is a priority, EEAST has given no further views than that set out above.

Appendix 1- Hertsmere Green Infrastructure Plan

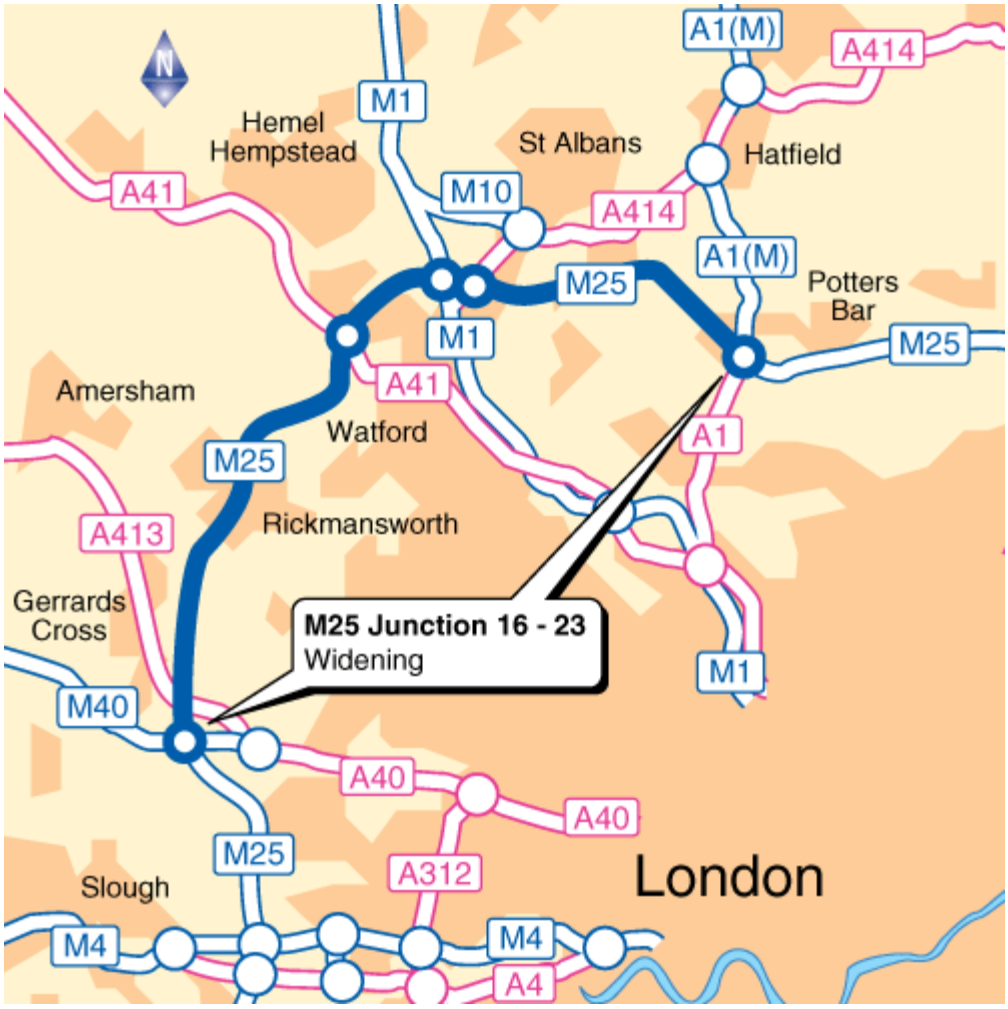


Appendix 2 – HIIS Transportation Elements



V/C = Ratio of Volume to Capacity - Measure of network stress in the East of England Regional Model, a SATURN model. In this instance a V/C of 80-100% indicates a link or junction under stress. A V/C over 100% indicates network over capacity

Appendix 3 – M25 Widening – Jct 16 to 23



http://www.highways.gov.uk/roads/projects/5749.aspx

Infrastructure Schedule

This table is not a comprehensive list of all infrastructure projects within the plan period, but rather seeks to outline a number of forthcoming infrastructure projects in or immediately adjacent to Hertsmere:

	Infrastructure Project	Reason for Project	Indicative Delivery Phasing	Estimated Cost	Funding Arrangements	Lead Delivery Agency
Transport Infrastructure						
Centennial Park Accessibility (UTP1)	Centennial Way-Waterside Park sustainable link	Improvements to public transport, cycling and walking	2012-2027/33	£40,000-£50,000	S106 / CIL	HBC/Centennial Park/Waterside Park
	Elstree Hill South/A41 Watford Bypass/Brockley Hill roundabout cycle crossing improvements		2012-2027/33	£200,000-£300,000	S106 / CIL	HBC
	Improved cycle crossing facilities at Centennial Way access roundabout		2012-2027/33	£5,000-£15,000	S106 / CIL	HBC
	Improve bus stop facilities within Centennial Way site		2012-2027/33	£25,000 (each site)	S106 / CIL	HBC/Centennial Park/Waterside Park
	Improve/implement cycle provision on Elstree Hill South between Centennial Way and Sullivan Way junction		2012-2027/33	£10,000-£20,000	S106 / CIL	HBC
Composers Estate, Elstree - Sustainable Connections (UTP2)	Cycle bypass route on Coates Road one-way section / in conjunction with one-way enforcement	Improvements to cycle linkages	2012-2027/33	£5,000-£8,000	S106 / CIL	HBC
	Convert Pelican crossing on Watford Road to Toucan standards		2012-2027/33	£80,000-£100,000	S106 / CIL	HBC
	On-road cycle route on Sullivan Way with access in vicinity of Schubert Way/Watford Road and Elstree Hill South junctions		2012-2027/33	£2,000-£5,000	S106 / CIL	HBC

	Infrastructure Project	Reason for Project	Indicative Delivery Phasing	Estimated Cost	Funding Arrangements	Lead Delivery Agency
Elstree Crossroads Junction Improvements	Preferred Scheme only	Highways and Congestion	2012-2027/33	£820,000	Committed / Secured	HBC
Elstree-Borehamwood Inter-Urban Cycle Spine	Station Road-Allum Lane service road link	Cycle network improvements	2012-2027/33	£5,000-£15,000	S106 / CIL	HBC
	Allum Lane service road on-road cycle provision		2012-2027/33	£2,000-£5,000	S106 / CIL	HBC
	Allum Lane service road - Cemetery access junction shared cyclepath/footpath		2012-2027/33	£40,000-£60,000	S106 / CIL	HBC
	Cemetery access junction - Elstree Hill North a) Via Elle-Dani Farm route		2012-2027/33	£20,000-£40,000	S106 / CIL	HBC
	Cemetery access junction - Elstree Hill North b) Via Aldenham Park route		2012-2027/33	£20,000-£40,000	S106 / CIL	HBC
	Elstree Hill North route		2012-2027/33	£90,000-£120,000	S106 / CIL	HBC
	Physical Gateway Measure (north of A5183 cottages)		2012-2027/33	£8,000-£15,000	S106 / CIL	HBC
	Gateway Measure - road markings / signage		2012-2027/33	£4,000-£8,000	S106 / CIL	HBC
Station Road/ Allum Lane/Theobald Street/Shenley Road Junction Improvements	Committed Scheme	Congestion	2012-2027/33	£801,000	Committed	HBC
Shenley Road/Elstree Way Roundabout	Preferred Scheme - Significant Scheme (longer term)	Cycling and walking improvements and to ease congestion	2012-2027/33	£3,500,000	S106	HBC
	Increase size of splitter islands/hatching and circulatory markings with the aim of reducing vehicle speeds and pedestrians'/cyclists' safety - interim scheme		2012-2027/33	£80,000-£120,000	CIL	HBC
Kenilworth Park-Maxwell Park	Cycle crossings/speed tables/build-outs on Manor Way (traffic to have priority)	Multi-modal accessibility improvements	2012-2027/33	£40,000-£60,000	S106 / CIL	HBC

	Infrastructure Project	Reason for Project	Indicative Delivery Phasing	Estimated Cost	Funding Arrangements	Lead Delivery Agency
Sustainable Link	Address cycle provision on Bullhead Road - park link (dog-leg approach)		2012-2027/33	£40,000-£60,000	S106 / CIL	HBC
Elstree Way East Cycle Gateway	Increase cycle lane widths	Cycle network improvements	2012-2027/33	£4,000-£5,000	S106 / CIL	HBC
	Eastbound cycle lane route - address Rowley Lane junction in vicinity of splitter island – off carriageway provision and improved cycle crossings		2012-2027/33	£22,000-£30,000	S106 / CIL	HBC
	Eastbound cycle lane route – reduce gyratory to single lane + on-road provision		2012-2027/33	£65,000-£80,000	S106 / CIL	HBC
	Improve westbound cycle lane route (improve jug-handle commencement of cycle lane)		2012-2027/33	£10,000-£20,000	S106 / CIL	HBC
Well End-Borehamwood Sustainable Connections	Rowley Lane-Denham Way - make route cycle compliant	Reduce car dependency and cycle network improvements	2012-2027/33	£15,000-£25,000	S106 / CIL	HBC
	Denham Way-Potters Way offroad shared cycle/footpath provision and crossing facilities		2012-2027/33	£40,000-£50,000	S106 / CIL	HBC
	Rowley Lane-Studio Way-Shenley Road link - make route cycle compliant (including crossing facilities and potential relocation of bus stop on Studio Way)		2012-2027/33	£80,000-£110,000	S106 / CIL	HBC
Stirling Corner Roundabout - Safer Navigation for Pedestrians and Cyclists	Reduce exit width on Barnet Lane / expand splitter island to improve cycle/pedestrian crossing and potentially reduce speeds on exit.	Address potential Speed and Safety issues, pedestrian and cycle improvements	2012-2027/33	£5,000-£10,000	S106 / CIL	HBC
	Nearside hatching on exit and introduce give-way line on Mobile Home access to give it greater presence		2012-2027/33	£2,000-£5,000	S106 / CIL	HBC
Cycle Parking at Key Local Facilities	Introduce cycle stands at Manor Way shopping parade	Programme of cycle and accessibility improvements	2012-2027/33	£2,000-£5,000	LTP	HBC
	Introduce cycle stands at Leeming Road shopping parade		2012-2027/33	£3,000-£6,000	LTP	HBC
	Introduce cycle stands at Hartforde Road shopping parade		2012-2027/33	£5,000-£10,000	LTP	HBC

	Infrastructure Project	Reason for Project	Indicative Delivery Phasing	Estimated Cost	Funding Arrangements	Lead Delivery Agency
	Introduce cycle stands at Rossington Avenue shopping parade		2012-2027/33	£5,000-£10,000	LTP	HBC
	Introduce cycle stands at Croxdale Road shopping parade		2012-2027/33	£2,000-£8,000	LTP	HBC
	Introduce cycle stands at Howard Drive shopping parade		2012-2027/33	£2,000-£5,000	LTP	HBC
	Introduce cycle stands at HBC Civic Offices		2012-2027/33	£2,000-£5,000	LTP	HBC
	Introduce cycle stands at The Point, Shenley Road		2012-2027/33	£2,000-£5,000	LTP	HBC
Balmoral Drive/Ashley Drive Parking Management	Double yellows protecting speed cushions	Address issues around parking and to improve public transport facilities	2012-2027/33	£5,000-£15,000	LTP	HBC
	Bollards adjacent to bus stops		2012-2027/33	£2,000-£5,000	LTP	HBC
	Bus stop improvements		2012-2027/33	£20,000-£30,000	LTP	HBC
Car Parking Variable Message Signs	VMS on Allum Lane	Ease congestion, manage and control parking	2012-2027/33	£30,000-£50,000	LTP	HBC
	VMS on Theobald Street		2012-2027/33	£30,000-£50,000	LTP	HBC
	VMS on Furzehill Road		2012-2027/33	£30,000-£50,000	LTP	HBC
	VMS on Shenley Road		2012-2027/33	£30,000-£50,000	LTP	HBC
	VMS on Elstree Way		2012-2027/33	£30,000-£50,000	LTP	HBC
	VMS on Brook Road		2012-2027/33	£30,000-£50,000	LTP	HBC
Newark Green Width Restriction Refresh	Scheme refresh (committed scheme already in progress)	Ease traffic and congestion, damage to width restriction measures/damage to vehicles	2012-2027/33	£5,000-£10,000	LTP	HBC
	Supplementary scheme enhancement - additional/replacement signage		2012-2027/33	£2,000-£5,000	LTP	HBC
HGV Weight Restriction review	Review HGV weight restrictions	Congestion	2012-2027/33	£8,000-£10,000	LTP	HBC
	Implement supporting directional signage		2012-2027/33	£10,000-£20,000	LTP	HBC
Borehamwood Shopping Park-Cycle Access	Implement cycle route (mixture of on/off-road provision)	Improve and encourage cycling, ease congestion	2012-2027/33	£110,000-£130,000	LTP	Borehamwood Shopping Park/HBC
	Introduce cycle stands and signage at Borehamwood Shopping Park		2012-2027/33	£5,000-£15,000	LTP	Borehamwood Shopping Park/HBC

	Infrastructure Project	Reason for Project	Indicative Delivery Phasing	Estimated Cost	Funding Arrangements	Lead Delivery Agency
	Improve walking and cycling environment along Theobald Street between Shenley Road and Borehamwood Shopping park		2012-2027/33	£6,000-£9,000+	LTP	Borehamwood Shopping Park/HBC
Allum Lane-Deacons Hill Footway Enhancements	Introduce dropped kerbs/speed tables at junctions on Deacons Hill	Improve pedestrian access/movement	2012-2027/33	£10,000-£20,000	LTP	HBC
	Improve pedestrian crossing facilities at Allum Lane/Deacon's Hill mini roundabout		2012-2027/33	£5,000-£15,000	LTP	HBC
	Pedestrian signing to Elstree and Borehamwood Station		2012-2027/33	£4,000-£6,000	LTP	HBC
Safe and Sustainable Access to Hertswood School	Improve pedestrian environment on Thrift Farm Lane	Improve general accessibility	2012-2027/33	£30,000-£50,000	LTP	HBC
	Implement parking control measures on Shenley Road adjacent to Thrift Farm Lane		2012-2027/33	£5,000-£10,000	LTP	HBC
	Introduce speed reduction measures adjacent to school sites		2012-2027/33	£30,000-£50,000	LTP	HBC
Cycle Wayfinding – Promoting the Connections	Elstree - Composers Estate - Centennial Way	Improve general accessibility. Address issue of high car dependency	2012-2027/33	£50,000-£300,000	S106/CIL	HBC
	Elstree - Borehamwood		2012-2027/33	£50,000-£300,000	S106/CIL	HBC
	Borehamwood		2012-2027/33	£50,000-£300,000	S106/CIL	HBC
Speed Compliance Response	Well End Road Gateway and Build Outs	Address potential Speed compliance issues in a number of locations	2012-2027/33	a) £1,200-£1,500 b) £30,000-£50,000	LTP	HBC
	Melrose Avenue - HCC scheme in preparation		2012-2027/33	£70,000	LTP	HBC
	Tempsford Avenue - 2 speed humps/uncontrolled pedestrian crossings (improved access to Tempsford Green)		2012-2027/33	£20,000-£40,000	LTP	HBC

	Infrastructure Project	Reason for Project	Indicative Delivery Phasing	Estimated Cost	Funding Arrangements	Lead Delivery Agency
	Theobald Street - various route measures		2012-2027/33	a) £11,400-£1,800 b)25,000-£30,000 c)£100,000-£110,000 d)£40,000-£60,000 d)£40,000-£60,000	LTP	HBC
	Shenley Road Town Centre Signage		2012-2027/33	£10,000-£20,000	LTP	HBC
UR1 Darkes Lane Shopping Area	Relocate existing pelican crossing	Improve the environment for pedestrians	2011-2031	150,000	LTP	HCC
	Shopping area enhancement		2011-2031	£500,000	S106/CIL	HCC
	Review and optimise current parking provision		2011-2031	£100,000	District/HCC	Hertsmere BC
UR2 Railway Bridge	Cosmetic improvements to the railway bridge	Improve the attractiveness of this area to encourage walking and cycling along this corridor.	2011-2031	£50,000	S106/CIL	Network Rail
	On-road cycle facility		2011-2031	£25,000	LTP	HCC
	Off-road cycle facility		2011-2031	£25,000	LTP	HCC
UR3 High Street (shopping section)	Rationalisation of parking	Ease congestion, improve on-street parking and address poor pedestrian provision along this route	2011-2031	£150,000	HBC / Developer	Hertsmere BC
	Improvements to pedestrian routes across junctions/vehicle crossovers		2011-2031	£150,000	LTP	HCC
	Reversal of traffic flow on princes parade		2011-2031	£50,000	S106/CIL	HCC
	Investigation of pedestrian link to Tesco		2011-2031	£10,000	S106/CIL	HCC
	General maintenance/enhancement of footways		2011-2031	£300,000	HCC	HCC
	Provision of trees and planting to improve streetscape		2011-2031	£300,000	S106/CIL	HCC
UR4 High Street (north section)	Improve environment and pedestrian facility at station entrance/exit	Improve the attractiveness of this area to encourage walking and cycling along this corridor	2011-2031	£50,000	Network Rail/Operator	Network Rail/Operator
	Promotion of cycle routes		2011-2031	£30,000	LTP	HCC
	Upgrade of PUFFIN crossing to TOUCAN		2011-2031	£60,000	S106/CIL	HCC
	Redesign of junction with Oakmere Lane and associated service road to improve pedestrian crossing movements		2011-2031	£50,000	LTP	HCC

	Infrastructure Project	Reason for Project	Indicative Delivery Phasing	Estimated Cost	Funding Arrangements	Lead Delivery Agency
PT1 Access around station forecourt	Station forecourt improvements	Improve access and for pedestrians and cyclists	2011-2031	£15,000	Network Rail	TOC/HCC
	Alternative use for existing cycle parking		2011-2031	£10,000	Network Rail/TOC	Network Rail/TOC
PT2 Access to station from west	Provision of cycle parking in station car park	Improve access and for pedestrians and cyclists	2011-2031	£40,000	Network Rail/TOC	Network Rail/TOC
	Promotion and improvement of key pedestrian and cycle route		2011-2031	£20,000	LTP	HCC
PT3 Bus stops and shelters improvement	DDA bus stop upgrades	Improve sustainable transport facilities	2011-2031	£15,000	LTP	HCC
PT4 Bus service destination and timetables	Promotion of existing community transport to Barnet General and Lister Hospitals	Improve sustainable transport facilities	2011-2031	£5,000	LTP	HCC
	Investigate with operators strengthening services within the South West of Potters Bar		2011-2031	£5,000	Local operators	Local Operators
	Investigate role for community transport within south west of Potters Bar		2011-2031	£5,000	LTP	Hertsmere Community Transport
	Liaise with TfL and local operators to review routing and timetabling options to meet relevant demand		2011-2031	£5,000	TfL	TfL
S1 Hatfield Road (speeding, narrow footway, bus stop)	Bus stop relocation	Address gaps in the accessible bus network and pedestrian improvements	2011-2031	£30,000	LTP	HCC/local operators
	New pedestrian crossing and footway improvement		2011-2031	£140,000	S106/CIL	HCC
S2 The causeway/cooper lane (pedestrian issues, inc shuttle working lights)	New pedestrian crossing	Address Potential pedestrian safety concerns due to the narrowness of the footway and speed of vehicles along this route	2011-2031	£130,000	S106/CIL	HCC
	Footway maintenance		2011-2031	£5,000	LTP	HCC
	Improvementsto existing crossing off Cotton Road		2011-2031	£15,000	LTP	HCC
	New formal crossing		2011-2031	£15,000	S106/CIL	HCC
	Review lane widths and parking		2011-2031	£5,000	LTP	HCC

	Infrastructure Project	Reason for Project	Indicative Delivery Phasing	Estimated Cost	Funding Arrangements	Lead Delivery Agency
S4 Oakmere Ave/Chace Ave/Oakmere Lane/Park Ave	Parking restrictions Chase Avenue/Forbes Avenue	Address concerns regarding on-street parking along this road particularly at the junctions with Forbes Avenue and Bowmans Close which are both classified as local access roads.	2011-2031	£5,000	S106/CIL	Hertsmere BC
	Parking restrictions Chase Avenue/Forbes Avenue		2011-2031	£5,000	S106/CIL	Hertsmere BC
S5 A111 Southgate Road	Review signal timing	Improve pedestrian cross faciltities in the vicinity of Park Avenue and address northbound congestion.	2011-2031	£5,000	LTP	HCC
	New pedestrian crossing		2011-2031	£140,000	LTP	HCC
S6 Darkes Lane - Manor Road to Church Road	Reconfigure road space to provide on-road cycle lanes	Address potential issues around speed and improve cycle and pedestrian accessibility	2011-2031	£60,000	LTP	HCC
	Removal of central pedestrian refuge		2011-2031	£20,000	LTP	HCC
S7 Baker Street (M25 Underbridge)	Cycle lanes in Baker Street underpass	Improving the environment for cyclists	2011-2031	£20,000	LTP	HCC/Highways Agency
	Lighting improvements under bridge		2011-2031	£70,000	LTP	HCC/Highways Agency
S8 Mount Grace Road	Traffic calming - vertical features	Address potential issues around speed	2011-2031	£200,000	LTP	HCC
	Traffic calming - sheltered parking bays		2011-2031	£50,000	LTP	HCC
S9 Baker Street	Signage and road marking	Address potential issues around speed	2011-2031	£35,000	LTP	HCC
	Sheltered parking		2011-2031	£60,000	LTP	HCC
	Traffic calming - vehicle activated sign		2011-2031	£30,000	LTP	HCC
NM1 - Line path from PB station to Royal Veterinary College and Brookmans Park	Section 1 - PB station to Cranborne Industrial Estate. Improvements to lighting	Improvements to the 'Non-Motorised User Network' which includes paths, tracks and other links for pedestrians,	2011-2031	£100,000	S106/CIL	HCC
	Section 2 - Cranborne Industrial Estate to Hawkshead Lane. Improvements to existing unmade path		2011-2031	£40,000	S106/CIL	HCC

	Infrastructure Project	Reason for Project	Indicative Delivery Phasing	Estimated Cost	Funding Arrangements	Lead Delivery Agency
	Section 3 - North of Hawkshead Lane conversion to Bridleway	cyclists and equestrians which are not part of the road network	2011-2031	£15,000	S106/CIL	HCC
	Route signing		2011-2031	£15,000	LTP	HCC
	Minor improvements to path access		2011-2031	£30,000	LTP	HCC
NM2 - PB station to Dame Alice Owens school and South Mimms	Signing along route for South Mimms	Improvements to the 'Non-Motorised User Network' which includes paths, tracks and other links for pedestrians, cyclists and equestrians which are not part of the road network	2011-2031	£15,000	S106/CIL	HCC
	Footpath improvement between Bridgefoot Lane to Wash Lane		2011-2031	£15,000	S106/CIL	HCC
	Surface improvements		2011-2031	£30,000	S106/CIL	HCC
	Provision of new footway between Wash Lane & t Albans Road		2011-2031	£30,000	S106/CIL	HCC
	Improvements to pedestrian/cycle infrastructure within service area		2011-2031	£50,000	Business	Land/leaseholder
NM3 Oakmere - Parkfield - Darkes Lane link	Signed cycle route between Oakmere and Darkes Lane	Improve access for residents of the Oakmere area and the east side of town to get to Darkes Lane shopping area and the station by bicycle, particularly getting across the busy High Street.	2011-2031	£10,000	S106/CIL	HCC
	Enhancement of crossing between Oakmere Park and Parkfield Park		2011-2031	£60,000	S106/CIL	HCC
	Publicity campaign for shared use pedestrian/cycle links through parks		2011-2031	£10,000	LTP	HCC
NM4 - Link from PB station via Mutton Lane to Furzefield Leisure Centre	Segregated cycle route	Improved access into the station by cycle from west and south-west of the town	2011-2031	£400,000	S106/CIL	HCC
	Cycle route connection to Swanland Road/via Cecil Road bridge		2011-2031	£10,000	LTP	HCC
	Cycle route connections to Swanland Road/ via Warrengate Road		2011-2031	£100,000	LTP	HCC
	Encourage Furzefield Centre to promote cycling		2011-2031	£5,000	LTP	Furzefield
NM5 Wash Lane	Surface improvements - Wash Lane and Dancers Lane	Improvements to National Cycle Network 12	2011-2031	£30,000	LTP	HCC
	Review options for improved drainage		2011-2031	£5,000	LTP	HCC
	Ramps to bypass		2011-2031	£20,000	LTP	HCC/Highways
NM6 Baker Street	Signed route	Improved link for	2011-2031	£50,000	S106/CIL	HCC

	Infrastructure Project	Reason for Project	Indicative Delivery Phasing	Estimated Cost	Funding Arrangements	Lead Delivery Agency
to Barnet Road link	Publicity campaign	pedestrians and cyclists	2011-2031	£5,000	LTP	HCC
RC1 High Street/Mutton Lane Junction	Junction modelling to review signal timing	Road congestion	2011-2031	£10,000	LTP	HCC
	Improve right turn into Mutton Lane		2011-2031	£50,000	S106/CIL	HCC
	Improve traffic flow on A111 Southgate Road		2011-2031	£50,000	LTP	HCC
	Provide pedestrian phase across Barnet Road		2011-2031	£70,000	S106/CIL	HCC
	Provide pedestrian phase across High Street		2011-2031	£70,000	S106/CIL	HCC
	Widen pedestrian islands		2011-2031	£30,000	S106/CIL	HCC
	Provide advanced stop line for motorists		2011-2031	£15,000	LTP	HCC
RC2 Darkes Lane/Mutton Lane Junction	Junction modelling to review signal timing	Road congestion	2011-2031	£10,000	S106/CIL	HCC
	Improve southbound traffic from Darkes Lane		2011-2031	£50,000	LTP	HCC
	Provide advanced stop line for motorists		2011-2031	£15,000	LTP	HCC
RC3 Hatfield Road/Church Road	Introduce MOVA at junction		2011-2031	£300,000	LTP	HCC
DM1 Car Park Signing	On-street signing	Road congestion	2011-2031	£10,000	LTP	HCC
	Real time information on off-street parking		2011-2031	£100,00	LTP	HCC/local operators
DM3 Freight Signing Plan	Review freight restrictions on key roads and improve signing	Road congestion	2011-2031	15,000	LTP	HCC
DM6 Walking and cycling signing and promotion	Mapping and publication of walk and cycle network	Road congestion improve pedestrian and cycle facilities	2011-2031	£20,000	LTP	HCC
	Promotion Campaign		2011-2031	£20,000	LTP	HCC
	Improved way-finding		2011-2031	£15,000	LTP	HCC
	Bikeability training for adults		2011-2031	£100,00	LTP	HCC
	Events and led rides		2011-2031	£50,000	LTP	HCC
	Shared use publicity campaign		2011-2031	£20,000	LTP	HCC
DM9 Station Travel Plan	Station Travel Plan	To provide information to residents and users of the station about alternative ways of accessing the station	2011-2031	£50,000	TOC/Network Rail	HCC

	Infrastructure Project	Reason for Project	Indicative Delivery Phasing	Estimated Cost	Funding Arrangements	Lead Delivery Agency
DM10 Hospital Travel Plan	Hospital Travel Plan	To provide information to residents and users of the station about alternative ways of accessing the station	2011-2031	£50,000	NHS	HCC
DM11 Travel Plans	Workplace Travel Plans and Personal Travel Planning	Ease congestion and promote sustainable transport.	2011-2031	£50,000	Business	HCC
Railway improvements	Station improvements – new pedestrian bridge and lift at Elstree and Borehamwood railway station	Improve accessibility	2012	£150,000	DFT Access for all funding	Network Rail First Capital Connect
	Thameslink Programme	Increased capacity at railway station and on trains, improved	2012 (up to 2018)	£6 billion *Not included in total below.*	TfL, DfT, FCC, Network Rail, Southern Railway, Southeastern	FCC, Network Rail
Total				**£11,557,600**		
Education						
Primary education provision - school Expansions or new schools within the Primary Planning Area of the Development	Provision of between 2.9 to 4.9 FE of primary school capacity as a result of development within Borehamwood.	To accommodate future demand	TBC 2012-2027	£11,480,000 - £19,520,000 Exclusive of Land	HCC Capital Programmes and Developer Contributions	HCC/Free School/Academy
	Provision of between 0.5 to 0.8 FE of primary school capacity as a result of development within Potters Bar, Ridge, and South Mimms	To accommodate future demand	TBC 2012-2027	£1,820,000 - £3,100,000 Exclusive of Land	HCC Capital Programmes and Developer Contributions	HCC/Free School/Academy
	Provision of between 1.2 to 2 FE of primary school capacity as a result of development within Bushey, Aldenham and Patchetts Green	To accommodate future demand	TBC 2012-2027	£4,760,000 - £8,100,000 Exclusive of Land	HCC Capital Programmes and Developer Contributions	HCC/Free School/Academy

	Infrastructure Project	Reason for Project	Indicative Delivery Phasing	Estimated Cost	Funding Arrangements	Lead Delivery Agency
	Provision of between 0.1 to 0.2 FE of primary school capacity as a result of development within Elstree and Shenley	To accommodate future demand	TBC 2012-2027	£440,000 - £750,000 Exclusive of Land	HCC Capital Programmes and Developer Contributions	HCC/Free School/Academy
	Provision of between 0.2 to 0.3 FE of primary school capacity as a result of development within Radlett	To accommodate future demand	TBC 2012-2027	£630,000 - £1,070,000 Exclusive of Land	HCC Capital Programmes and Developer Contributions	HCC/Free School/Academy
Secondary education provision - school Expansions or new schools within the Primary Planning Area of the Development	Provision of between 2.9 to 4.9 FE of primary school capacity as a result of development within Borehamwood.	To accommodate future demand	TBC 2012-2027	£9,080,000 – £15,430,000 Exclusive of Land	HCC Capital Programmes and Developer Contributions	HCC/Free School/Academy
	Provision of between 0.5 to 0.8 FE of primary school capacity as a result of development within Potters Bar, Ridge, and South Mimms	To accommodate future demand	TBC 2012-2027	£1,440,000 - £2,450,000 Exclusive of Land	HCC Capital Programmes and Developer Contributions	HCC/Free School/Academy
	Provision of between 1.2 to 2 FE of primary school capacity as a result of development within Bushey, Aldenham and Patchetts Green	To accommodate future demand	TBC 2012-2027	£3,770,000 - £6,400,000 Exclusive of Land	HCC Capital Programmes and Developer Contributions	HCC/Free School/Academy
	Provision of between 0.1 to 0.2 FE of primary school capacity as a result of development within Elstree and Shenley	To accommodate future demand	TBC 2012-2027	£350,000 - £590,000 Exclusive of Land	HCC Capital Programmes and Developer Contributions	HCC/Free School/Academy
	Provision of between 0.2 to 0.3 FE of primary school capacity as a result of development within Radlett	To accommodate future demand	TBC 2012-2027	£500,000 - £840,000 Exclusive of Land	HCC Capital Programmes and Developer Contributions	HCC/Free School/Academy
Total				**£34,260,000 - £58,250,000**		

	Infrastructure Project	Reason for Project	Indicative Delivery Phasing	Estimated Cost	Funding Arrangements	Lead Delivery Agency
Sport and Open Space						
Playing Field	Aldenham - 2 cricket pitches	Identified shortfall to 2016 taking into account current provision and planned growth	2013-2016	£400,000	CIL / S106	HBC
	Shenley - 1 junior football pitch			£65,000	CIL / S106	HBC
	Shenley - 1 cricket pitch			£200,000	CIL / S106	HBC
	Shenley - 2 football pitches			£150,000	CIL / S106	HBC
	Borehamwood - 2 junior rugby pitches			£260,000	CIL / S106	HBC
	Borehamwood - 1 cricket pitch			£200,000	CIL / S106	HBC
	Elstree - 3 football pitches			£225,000	CIL / S106	HBC
	Elstree - 1 mini-soccer pitch			£25,000	CIL / S106	HBC
	Bushey - 2 junior football pitches			£130,000	CIL / S106	HBC
	Bushey - 1 cricket pitch			£200,000	CIL / S106	HBC
	Bushey - 2 football pitches			£150,000	CIL / S106	HBC
	Bushey - 4 junior football pitches			£260,000	CIL / S106	HBC
	Bushey - 1 mini-soccer pitch			£25,000	CIL / S106	HBC
	Bushey - 1 cricket pitch			£200,000	CIL / S106	HBC
	Potters Bar - 2 mini-soccer pitches			£50,000	CIL / S106	HBC
	Potters Bar - 1 cricket pitch			£200,000	CIL / S106	HBC
	Potters Bar - 1 hockey pitch			£700,000	CIL / S106	HBC
Parks	Provision of 13.5ha of parks to address for shortfall in provision in Bushey and Potters Bar	Identified shortfall taking into account current provision and planned growth	TBC	£11,070,000 Exclusive of Land	CIL / S106	HBC
Watling Chase Greenways	Greenway Strategy Delivery	Providing and promoting a network for walkers, cyclists and horse riders to encourage people to make more sustainable journeys.	2003-ongoing	£4,680,000	CIL / S106	HBC
Total				**£19,190,000**		

	Infrastructure Project	Reason for Project	Indicative Delivery Phasing	Estimated Cost	Funding Arrangements	Lead Delivery Agency
Community and Culture						
Allotments	Allotments in Borehamwood	Identified shortfall taking into account current provision and planned growth	Not identified	£5,708,832 Exclusive of Land	CIL / S106	HBC
	Allotments in Potters Bar	Identified shortfall taking into account current provision and planned growth	Not identified	£1,665,076 Exclusive of Land	CIL / S106	HBC
Cemeteries and Burial Places	Feasibility study of expanding facilities at Allum Lane	To accommodate future demand – as outlined in the Open Space Strategy	Not identified	£1,300,000	CIL / S106	HBC
Library Facilities	Borehamwood Community Hall and Library	Borehamwood Community Hall and Library - Relocation and enhancement of existing library provision to a new building in Borehamwood Town Centre	2012-2013	£4,500,000	HCC, Parish Council, EEDA	HCC, Parish Council, East of England Development agency
Heritage Facilities	Borehamwood Museum	Relocation and enhancement of the existing museum to building in the Borehamwood Town Centre	2012-2013	Part of above library facility	HCC, Parish Council, EEDA	HCC, Parish Council, East of England Development agency
Total				**£13,173,908**		
Health and Emergency Services						
Police	Requirement for police surgery to be located within Borehamwood development.	To accommodate future demand	Not identified	£500,000	CIL / S106	Herts Police

	Infrastructure Project	Reason for Project	Indicative Delivery Phasing	Estimated Cost	Funding Arrangements	Lead Delivery Agency
	Need to upgrade 'Airwave' Communication system to improve radio coverage to area (i.e. potential installation of additional communication mast etc.	To accommodate future demand	Not identified		CIL / S106	Herts Police
	Operational requirement to extension existing custody provision within adjoining district to manage potential increase in population.	To accommodate future demand	Not identified		CIL / S106	Herts Police
	Capital funding to adapt/extend existing police station accommodation in Borehamwood (shortly relocating to Hertsmere Civic Offices as you are aware)	To accommodate future demand	Not identified		CIL / S106	Herts Police
	Potential need to upgrade roundabout and associated junction adjacent to Civic Offices in order to minimise impact of increased traffic generation at an already busy junction which if not addressed will impact on operational response	To accommodate future demand	Not identified		CIL / S106	Herts Police
Health	GP Surgeries	To accommodate future demand	TBC	TBC	TBC	TBC
Utilities						
Sewerage	Upgrading of Maple Lodge and Blackbirds waste water treatment works	To increase treatment capacity to meet future demand and ensure required discharge standards are met	Not identified	Not identified	Not identified	Thames Water