Quality information

Prepared by
Michael Aquilina
Consultant
Amelia Kent
Senior Ecologist

Checked by
Mark Fessey
Associate Director
Max Wade
Technical Director

Approved by
Steve Smith
Technical Director
James Riley
Technical Director

Revision history

<table>
<thead>
<tr>
<th>Revision</th>
<th>Revision date</th>
<th>Details</th>
<th>Authorised</th>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1</td>
<td>January 2020</td>
<td>Initial draft for client review</td>
<td>Yes</td>
<td>Mark Fessey</td>
<td>Associate Director</td>
</tr>
<tr>
<td>V2</td>
<td>February 2020</td>
<td>Report published for consultation</td>
<td>Yes</td>
<td>Mark Fessey</td>
<td>Associate Director</td>
</tr>
</tbody>
</table>

Prepared for:
London Borough of Enfield

Prepared by:
AECOM Limited
Aldgate Tower
2 Leman Street
London E1 8FA
United Kingdom
aecom.com

© 2020 AECOM Limited. All Rights Reserved.

This document has been prepared by AECOM Infrastructure & Environment UK Limited ("AECOM") in accordance with its contract with London Borough of Enfield (the "Client") and in accordance with generally accepted consultancy principles and the established budget. Any information provided by third parties and referred to herein has not been checked or verified by AECOM, unless otherwise expressly stated in the document. AECOM shall have no liability to any third party that makes use of or relies upon this document.
# Table of contents

Non-technical Summary

1. Introduction ...................................................................................................... 1
2. Air quality ......................................................................................................... 4
3. Biodiversity .................................................................................................... 12
4. Climate change adaptation ............................................................................ 21
5. Climate change mitigation ............................................................................. 29
6. Communities .................................................................................................. 39
7. Crime and community safety ......................................................................... 48
8. Economy and employment ............................................................................ 53
9. Health ............................................................................................................ 63
10. Heritage and townscape ................................................................................ 71
11. Housing ......................................................................................................... 76
12. Landscape and green infrastructure .............................................................. 82
13. Transport ....................................................................................................... 91
14. Water ........................................................................................................... 100
15. Next steps ................................................................................................... 105

Appendix I: HRA scoping ........................................................................................ 106
Appendix II: Meeting notes ...................................................................................... 118
Figures and tables

Figure 1.1 Overview of London Borough of Enfield .................................................................................................................. 2
Figure 1.2 LBE in the sub-regional context .............................................................................................................................. 3
Figure 2.1: Focus areas LAEI 2013 in Enfield – December 2016 update .................................................................................. 10
Figure 3.1 Broad habitats in Enfield’s open spaces .................................................................................................................. 16
Figure 3.2: Epping Forest SAC: recreational zones of influence ............................................................................................... 17
Figure 3.3 Picture of the Woodbury Wetlands Reservoir .......................................................................................................... 19
Figure 4.1: UKCP18 projected summer and winter changes by the 2070s ..................................................................................... 21
Figure 4.1: Land Sat image of land surface temperature in June 2011 in London ........................................................................... 26
Figure 4.2: Flood risk in LBE ..................................................................................................................................................... 28
Figure 5.1: The London Plan’s energy hierarchy and associated targets .......................................................................................... 31
Figure 5.2: London-wide 2015 greenhouse gas emissions by sector .............................................................................................. 32
Table 5.1: Local authority CO₂ emissions estimates within the scope of influence of local authorities 2005-2016 ......................... 34
Table 5.3: Proportion of energy demand and CO₂ emissions from different building types within Enfield ........................................ 36
Table 6.1: Population growth 2011 – 2016 .................................................................................................................................. 42
Table 6.2: Age structure in 2011 ..................................................................................................................................................... 42
Table 6.3: Age structure in 2018 – mid-year ................................................................................................................................. 42
Figure 6.1: 2011 Census prevalence of non-white ethnic groups in Enfield .................................................................................. 43
Figure 6.2: Enfield multiple indices of deprivation map (2015) ................................................................................................. 44
Figure 6.3: Indicators of deprivation in comparison to the London average and the national median rank ........................................ 44
Table 6.4: Relative household deprivation dimensions (2011) ................................................................................................. 45
Table 6.5: Educational Qualifications, 2011 Census ..................................................................................................................... 46
Figure 7.1: Enfield crime breakdown April 2018 – 2019 .................................................................................................................. 50
Figure 7.2: Serious youth violence in Enfield, May 2018 – April 2019 ............................................................................................. 51
Figure 8.1: UK productivity relative to other G7 countries ............................................................................................................ 53
Figure 8.2: Overview of the Industrial Strategy .......................................................................................................................... 54
Table 8.1: Spatial Distribution of New Jobs .................................................................................................................................. 55
Figure 8.3: Population estimates 2018-male/female age pyramid .................................................................................................. 57
Figure 8.4: Age profiles, Enfield and comparators ..................................................................................................................... 58
Figure 8.5: LBE claimant count by middle super output area, December 2013 ............................................................................. 59
Table 8.1: Highest level qualifications (2011 Census) .................................................................................................................. 60
Figure 8.6: Area Action Plans and Regeneration Areas ................................................................................................................ 61
Figure 9.1 Percentage of children aged 10-11 years old who are overweight or obese in LBE ......................................................... 66
Figure 9.2: General health status (2011 Census) .......................................................................................................................... 67
Table 9.1 Long term health category .......................................................................................................................................... 67
Table 9.2 Life expectancy at birth 2009 – 2013 ............................................................................................................................... 67
Figure 9.3 Percentage of residents completing 2 x 10 minutes of active travel per day .............................................................. 69
Figure 10.1: Listed buildings and registered parks and gardens .................................................................................................. 74
Figure 11.1: Enfield housing trajectory (2019) ............................................................................................................................. 79
Table 11.1: Weekly rent levels across tenure (Enfield House and Growth Strategy 2020-2030) ......................................................... 79
Table 11.2: Homelessness in Enfield ......................................................................................................................................... 80
Table 11.3: Affordable housing completions (AMR) ..................................................................................................................... 80
Figure 12.1: Green infrastructure and policy priorities ............................................................................................................. 84
Figure 12.2: A map of LBE’s green spaces .................................................................................................................................. 88
Figure 12.3: LBE’s Important Local Longer Distance Views ........................................................................................................ 89
Figure 13.1: The 10 indicators to the Healthy Street approach .................................................................................................... 92
Figure 13.2: Established cycle routes within LBE ....................................................................................................................... 96
Figure 13.3 Car and van ownership ........................................................................................................................................... 97
Figure 13.4: Method of travel to work ........................................................................................................................................ 97
Non-technical Summary

AECOM has been commissioned by the London Borough of Enfield (LBE) to lead on the Integrated Impact Assessment (IIA) in support of the emerging New Enfield Local Plan 2041.

The Local Plan, once adopted, will establish a spatial strategy, in respect of housing, employment and other forms of development, up to 2041, allocate sites to deliver that strategy and establish policies to guide the planning application process. The new Local Plan will replace the Core Strategy (2010), the Development Management Document (2014) and several Area Action Plans. Importantly, the new Local Plan will be in accordance with the Draft New London Plan, which is currently at an advanced stage of preparation.

IIA involves undertaking the legally required Sustainability Appraisal (SA) process alongside: Equality Impact Assessment (EqIA), which is undertaken in order to discharge the Public Sector Equality Duty; Community Safety Impact Assessment (CSIA), in line with the Council’s duty to do all that reasonably can be done to prevent crime and disorder; and Health Impact Assessment (HIA) to promote health equality and have regard to the health effects of planning policies.

As a first step in the Local Plan IIA process there is a need to establish the ‘scope’ of issues that should be a focus of subsequent assessment stages. This report presents a draft scope for consultation, which will be adjusted in light of consultation responses received. At that point the scope will be established such that assessment work can commence, although the scope will naturally remain subject to review throughout the plan-making / IIA process.

This report is structured under a series of broad topic headings, with the headings selected in order to reflect the breadth of IIA. Each topic-specific chapter presents a review of evidence before arriving at a shortlist of key issues that should be a focus of future assessment work and one or more key objectives that will be used to formally structure future assessment work. The list of topics and objectives is collectively known as the IIA ‘framework’.

The draft IIA framework is presented concisely below.

Also, please note that Appendix I of this report presents a discussion of the scope of forthcoming Habitats Regulations Assessment (HRA). HRA is a separate process focused on avoiding impacts to internationally designated biodiversity sites, and there is no formal requirement to ‘scope’; however, an early discussion of HRA scope is considered appropriate. In short, the discussion within Appendix I concludes that the HRA of the Local Plan is likely to require a focus on the risk of adverse effects on Epping Forest, although impacts on Lee Valley SPA/Ramsar site and Wormley Hoddesdon Park Woods SAC will also need to be a consideration.

Finally, please note that a range of initial engagement activities were undertaken in order to inform preparation of this draft Scoping Report, as discussed within Appendix II of this report.

The Council and AECOM look forward to receiving comments on this draft IIA Scoping Report. Comments are welcomed on the proposed IIA framework, identified key issues and sources of evidence that should be taken into account as part of IIA work moving forward. Please submit comments by 23rd March 2020.
### The draft IIA framework

<table>
<thead>
<tr>
<th>Topic</th>
<th>Objective(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air quality</td>
<td>• Minimise air pollution, support reduced air pollution in existing hotspots and avoid the creation of new air pollution hotspots, contributing to the achievement of the national and London-wide targets.</td>
</tr>
<tr>
<td>Biodiversity</td>
<td>• Deliver biodiversity net gain at an ambitious scale through a focus on avoiding/mitigating impacts to valued habitats and land that contributes to ecological connectivity and delivering targeted enhancements that improve the functioning of networks and are supportive of established conservation objectives.</td>
</tr>
<tr>
<td>Climate change adaptation</td>
<td>• Ensure resilience to climate change particularly mindful of the likelihood of climate change leading to problematic high temperatures, worsened flood risk and increased risk of drought</td>
</tr>
<tr>
<td>Climate change mitigation</td>
<td>• Ensure the Local Plan serves to minimise LBE’s per capita CO2 emissions such that the borough is on track to achieve carbon neutrality by 2030</td>
</tr>
<tr>
<td>Communities</td>
<td>• Support good access to services, facilities and wider community infrastructure, for new and existing residents, mindful of the potential for community needs to change over time.</td>
</tr>
<tr>
<td></td>
<td>• Develop social cohesion through good urban design, using the healthy streets indicators and community spaces that act as a catalyst for community cohesion.</td>
</tr>
<tr>
<td></td>
<td>• Seek to ensure new developments provide for existing communities delivering targeted actions including in respect of housing needs, community infrastructure and urban realm.</td>
</tr>
<tr>
<td>Crime and community safety</td>
<td>• Support targeted interventions to reduce crime and increase community safety, guided by LBE’s Crime and Community Safety team, and ensure high quality new developments that are future proofed.</td>
</tr>
<tr>
<td></td>
<td>• Focus on delivering the ‘Vision Zero’ target for road safety; through safe street design using healthy streets principles to ensure pedestrians and cyclists can travel safely.</td>
</tr>
<tr>
<td>Economy and employment</td>
<td>• Support a strong, diverse and resilient economy that provides opportunities for all, including by supporting strategic industrial locations, the vitality of the borough’s town and local centres and a diversification of the employment opportunities locally, including employment within the social enterprise, voluntary and community sectors and a growing higher wage economy.</td>
</tr>
<tr>
<td>Health</td>
<td>• Improve the physical and mental health and wellbeing of Enfield residents and reduce health inequalities between local communities within the borough.</td>
</tr>
<tr>
<td>Heritage and townscape</td>
<td>• Support the integrity, special interest, character, appearance and historic setting of historic settlements and heritage assets, both designated and non-designated; facilitate enhancements to the fabric and setting of the historic environment; and support access to, interpretation and understanding of the historic environment (including through investigations and studies which better reveal the significance of archaeological assets)</td>
</tr>
<tr>
<td>Housing</td>
<td>• Deliver housing to meet agreed targets and support an appropriate mix of housing types and tenures, including affordable and specialist housing, including housing for the elderly and disabled people.</td>
</tr>
<tr>
<td>Landscape and green infrastructure</td>
<td>• Protect and enhance the character, quality and diversity of the borough’s landscapes and townscape through appropriate location, layout and design of new development, including the preservation of important open gaps and key views, and contribute to London-wide Green Infrastructure objectives including in respect of the Lea Valley Regional Park.</td>
</tr>
<tr>
<td>Transport</td>
<td>• Minimise the need to travel, support modal shift away from the private car and address traffic congestion within the borough and along key routes through neighbouring areas, with a focus on emission reduction, health impacts and the delivery of pedestrian friendly urban design.</td>
</tr>
<tr>
<td>Water</td>
<td>• Minimise water use in new developments through innovative design measures and ensure that development is directed to locations with sufficient wastewater infrastructure capacity.</td>
</tr>
</tbody>
</table>
1. Introduction

Background

1.1 AECOM has been commissioned by the London Borough of Enfield (LBE) to lead on the Integrated Impact Assessment (IIA) in support of the emerging New Enfield Local Plan 2041.

1.2 The Local Plan, once adopted, will establish a spatial strategy, in respect of housing, employment and other forms of development, up to 2041, allocate sites to deliver that strategy and establish policies to guide the planning application process. The new Local Plan will replace the Core Strategy (2010), the Development Management Document (2014) and several Area Action Plans. Importantly, the new Local Plan will be in accordance with the Draft London Plan (2017), which is currently at an advanced stage of preparation.

1.3 IIA involves undertaking the legally required Sustainability Appraisal (SA) process alongside: Equality Impact Assessment (EqIA), which is undertaken in order to discharge the Public Sector Equality Duty; Community Safety Impact Assessment (CSIA), in line with the Council’s duty to do all that reasonably can be done to prevent crime and disorder; and Health Impact Assessment (HIA) to promote the reduction of health inequality and have regard to the health effects of planning policies.

1.4 AECOM is also leading on a further legally required assessment process, namely Habitats Regulations Assessment (HRA); however, HRA involves distinct procedural steps, and hence is undertaken as a stand-alone process. Further information on HRA is presented within Appendix I.

1.5 IIA must be undertaken in accordance with the procedural requirements set out by the Environmental Assessment of Plans and Programmes (‘SEA’) Regulations 2004. The process involves four steps:

<table>
<thead>
<tr>
<th>IIA Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Scoping</td>
<td>Establish the key issues/objectives that will (and will not) be a focus of the assessment stages.</td>
</tr>
<tr>
<td>2) Establish and assess reasonable alternatives</td>
<td>Explore alternative ways of achieving plan objectives in time to inform the preparation of the Draft Plan.</td>
</tr>
<tr>
<td>3) Assess the emerging Draft Plan</td>
<td>Scrutinise the performance of the emerging plan in respect of the framework of issues/objectives established at the scoping stage and make recommendations to the plan-maker.</td>
</tr>
<tr>
<td>4) Publish the IIA Report</td>
<td>Publish a report alongside the Draft Plan that presents a range of required information, but fundamentally an assessment of ‘the plan and reasonable alternatives’ in order to inform the consultation and plan finalisation.</td>
</tr>
</tbody>
</table>

This Scoping Report

1.6 This Scoping Report is concerned with stage 1 above. It presents a draft scope for the IIA so that the designated authorities and wider stakeholders can provide timely comment.¹

¹ The SEA Regulations require that: “When deciding on the scope and level of detail of the information that must be included in the Environmental Report [i.e. the SA scope], the responsible authority shall consult the consultation bodies”. In England, the consultation bodies are the Environment Agency, Historic England and Natural England. In-line with Article 6(3) of the SEA Directive [the forerunner to the SEA Regulations], these bodies were selected because “by reason of their specific environmental responsibilities, [they] are likely to be concerned by the environmental effects of implementing plans...”
This report is structured under a series of thematic ‘topic’ headings, with the list of topics having been agreed between LBE and AECOM at the outset of the scoping process. Under each topic heading the aim is to 1) review available evidence, both ‘context’ and ‘baseline’; 2) distil key issues; and then 3) further distil one or more ‘sustainability objectives’. The final list of sustainability objectives, known as the IIA ‘framework’, will be used to structure forthcoming assessment work.

A note on evidence

It should be noted that a significant element of the evidence review process involved engaging with a number of teams within LBE to understand the key issues faced within the borough as well as gathering key sources of evidence. Further to this, a workshop was held with neighbouring local authorities and key external stakeholders to gain an appreciation of cross-boundary and strategic issues for the sub-region.

Introduction to the plan area

LBE is the most northerly London borough and is made up of 21 wards. It shares a border with LB Waltham Forest to the east, LB Haringey to the south and LB Barnet to the west. To the north of the borough it shares borders with two county councils: Hertfordshire (HCC) and Essex (ECC). Within HCC, three district councils share borders with LBE: Welwyn Hatfield, Hertsmere and Broxbourne. Within ECC, Epping Forest District Council borders LBE. Figures 1.1 and 1.2 present a spatial overview.

Figure 1.1 Overview of London Borough of Enfield
**Figure 1.2 LBE in the sub-regional context**
2. Air quality

Introduction

2.1 Air pollution is the top environmental risk to human health in the UK, and the fourth greatest threat to public health after cancer, heart disease and obesity. A recent report from The Lancet Commission on pollution and health (2017), estimates that within the UK, air pollution is linked to 50,000 deaths each year.2 Recent research commissioned by Public Health England has found that the health and social care costs of two key pollutants (PM2.5 and NO2) in England could reach £5.3 billion by 2035.3 Furthermore, in a recent report published by Public Health England, long term exposure to air pollution is estimated to attribute to between 28,000 – 36,000 deaths per annum.4

2.2 This is a cumulative cost for diseases where there is a strong association with air pollution: coronary heart disease; stroke; lung cancer; and child asthma. When diseases with weaker evidence of association are also added, including dementia, the costs could reach £18.6 billion by 2035. When all diseases are included, air pollution is expected to cause 2.4 million new cases of disease in England between now and 2035. Small changes can make a big difference – just a 1µg/m3 reduction in PM2.5 could prevent 50,000 cases of heart disease by 2035.

2.3 Air pollution also harms the natural environment, with many ecosystems known to be impacted significantly by current levels of pollution.

2.4 In the London context, the key driver of air pollution is transport, this link will be explored in greater detail within this chapter and chapter 13. The primary source of pollution varies from pollutant to pollutant but for the purposes of this report it is considered appropriate to focus primarily on pollution from transport, with the main pollutant being nitrogen dioxide (NO2) and Particulate Matter (PM2.5 and PM10).

Context review

National

2.5 The European Union has driven air quality regulation and standards in the UK. The Air Quality Standards Regulations 2010 transpose into UK law the EU Ambient Air Quality Directive (2008/50/EC) which sets legally binding limits for outdoor concentrations of major air pollutants which impact public health. Although Brexit is imminent, the Government has been clear that there are no plans to change air quality standards and limits and therefore it is likely air quality legislation will be converted to domestic law.

2.6 The European Union has set legally binding concentration limits on Particulate Matter (PM10 and PM2.5) and Nitrogen Dioxide (NO2).

2.7 Defra has set national emission reduction targets for five air pollutants: Fine particulate Matter (PM2.5), ammonia (NH3), Nitrogen Oxides (NOx), Sulphur Dioxide (SO2) and non-methane volatile organic compounds (NMVOCs).5

---

2 www.thelancet.com/commissions/pollution-and-health
2.8 The UK published its Clean Air Strategy in 2019, setting out the comprehensive action that is required from across all parts of government and society to meet air quality goals. It aims to complement the Clean Growth Strategy (2017) and the Industrial Strategy (2017), which itself notably supported the £1.7bn Transforming Cities Fund which aims to invest in new public and sustainable transport connectivity to boost productivity. Key statements in respect of transport, clean growth and protecting the environment are as follows:

- “Transport is a significant source of emissions of air pollution. The immediate air quality challenge is to reduce emissions of nitrogen oxides in the areas where concentrations of these harmful gases currently exceed legal limits. The government has already committed more than £3.5 billion to tackle poor air quality through cleaner road transport and is working closely with local authorities and Local Economic Partnerships to make progress. Alongside this, the government is committed to cutting air pollution from all forms of transport”
- “Action to clean up the air will boost productivity and economic growth. We will make the UK a world leader in the development, use and export of goods and services focused on tackling air pollution.”
- “This strategy is a key part of delivering our 25 Year Environment Plan. Air pollution has direct impacts on the natural environment... Cleaner air will directly benefit animals and habitats as well as creating a better environment for everyone to live, work and thrive in.”

2.9 Key messages from the National Planning Policy Framework (NPPF) with respect to air quality include:

- Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, considering the presence of Air Quality Management Areas (AQMAs) and Clean Air Zones, and the cumulative impacts from individual sites in local areas.
- Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan.
- Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions and improve air quality and public health.
- New and existing developments should be prevented from contributing to, being put at unacceptable risk from, or being adversely affected by unacceptable levels of air pollution.

2.10 The government published the ‘UK plan for tackling roadside nitrogen dioxide concentrations’ in July 2017. This is the air quality plan for bringing nitrogen dioxide within statutory limits in the shortest possible time. The plan identifies that “the link between improving air quality and reducing carbon emissions is particularly important” and that consequently the UK government is determined to be at the forefront of vehicle innovation by making motoring cleaner.

---

Regional

2.11 Key messages with respect to air quality from the Draft London Plan (2017)\(^9\) include:

- Policy SI1 (Improving air quality) which states that development proposals should not: lead to further deterioration of existing poor air quality; create new areas which exceed air quality limits; reduce air quality benefits from activities or initiatives at borough-level, and; create unacceptable risk of high levels of exposure to poor air quality.

- Policy SI2 (Minimising greenhouse gas emissions) says that major development should be net zero-carbon to support London becoming a zero-carbon city.

- Policy GG3 (Creating a healthy city) seeks to “improve London’s air quality, reduce public exposure to poor air quality and minimise inequalities in levels of exposure to air pollution.”

2.12 The London Environment Strategy (2018) (MES)\(^10\) ambitiously aims to transform London’s air quality from “illegally poor” to “the best air quality of any major world city” by 2050. Key message from Chapter 4 (Air Quality) include:

- Trends for NO\(_2\), PM\(_{10}\) and PM\(_{2.5}\) all show a reduction in emissions at a London-wide scale, though NO\(_2\) emissions continue to breach mean EU limits.

2.13 Some of the main policies for air quality in the MES are:

- Policy 4.1.1 Make sure that London and its communities, particularly the most disadvantaged and those in priority locations, are empowered to reduce their exposure to poor air quality

- Policy 4.2.1 Reduce emissions from London’s road transport network by phasing out fossil fuelled vehicles, prioritising action on diesel, and enabling Londoners to switch to more sustainable forms of transport

- Policy 4.2.3 Reduce emissions from non-transport sources, including by phasing out fossil fuels

- Policy 4.3.2 The Mayor will encourage the take up of ultra-low and zero emission technologies to make sure London’s entire transport system is zero emission by 2050 to further reduce levels of pollution and achieve WHO air quality guidelines

2.14 The Mayors Transport Strategy (2018) also sets out strong recommendations to resolve air quality in London. In particular the Ultra Low Emission Zone (ULEZ) is the key programme proposed to tackle this, stating that road traffic is the key source of air quality issues in areas where people live and work. Proposal 21 within the MTS states the timeline and growth of the programme form central to inner London:


2.15 Air quality is also one the 10 Healthy Streets indicators ‘Clean Air – Improving air quality delivers benefits for everyone and reduces unfair health inequalities. An essential part of this programme is the ‘Liveable Neighbourhoods’ programme, which through local measures aims to address pollution from transport in local air quality hotspots.\(^11\)

Local

2.16 LBE’s most recent Air Quality Action Plan was published in 2015. It shows that problems of air pollution are particularly marked alongside the borough’s major roads, including the A406, A10 and Bullsmoor Lane. The action plan is a working document and focuses on NO\(_2\) and PM\(_{10}\) objectives.

---


2.17 The key messages from the current Local Plan (the 2010 Core strategy) are:

- Core Policy 32: The policy notes that air pollution needs to be addressed and any new development will be required to improve air quality by reducing pollutant emissions and public exposure to pollution. The policy notes that this should be a particular focus on areas identified as having poor air quality in the borough’s Air Quality Action Plan.

- The Air Quality Action Plan Local Planning Authorities are required to publish annual Air Quality Annual Status Reports (ASRs) to discharge their monitoring obligations under Part IV of the Environment Act (1995). This requires local authorities to review air quality in their areas and designate air quality management areas (AQMA) if improvements are necessary. Where an AQMA is designated, an air quality action plan (AQAP) must then be put in place with a five-year time horizon. LBE published its most recent AQAP in 2015 to cover the period to 2020.

2.18 LBE’s adopted Development Management Document (2014) guides decisions on planning applications within Enfield, the policies set out within this document are linked to one or more of the Core Strategy (2010) policies, the policies specifically related to air quality are:

- DMD 65: Air Quality: Notes that planning applications will only be accepted if air quality impacts are neutral and major developments located near air quality hotspots will have to be accompanied by an air quality assessment.

2.19 LBE has three Area Action Plans, all of which support the Core Strategy Policy 32 and DMD 65, given that the entirety of the borough has been declared an Air Quality Management Area. Notably, the North Circular Area Action Plan has a policy focused on air quality:

- Policy 9 Environmental Mitigation – Air quality and Pollution: New development design and landscaping of the development can support the borough’s expectations that new developments are at least ‘air quality’ neutral.

**Baseline review**

**Current**

2.20 Following detailed assessments, LBE as a whole has been declared an Air Quality Management Area (AQMA) for NO\(_2\) and PM\(_{10}\). This was due to the 2011 air quality assessments showing that the 1 hour mean objective of 200 µg m\(^{-3}\) (not to be exceeded more than 18 times a year) for NO\(_2\) and 24 hour mean objective of 50 µg m\(^{-3}\) (not to be exceeded more than 35 days in one year) for PM\(_{10}\) were exceeded in parts of the borough.

2.21 The Council has four real time air quality monitoring stations; two road side and two background sites, to assess levels of NO\(_2\), PM\(_{10}\) and PM\(_{2.5}\), located at the following sites:

- Prince of Wales School;
- Bush Hill Park;
- Bowes Primary School; and
- Derby Road.

2.22 There are also recently install monitoring stations as part of the Breathe London initiative\(^\text{13}\), located at:

- Hertford Road; and
- Southbury Road.

---


\(^{13}\) The Breathe London Initiative is a multi-partner project which aims to better understand the exposure to air pollution in London. It uses state-of-the-art air quality sensors to inform an interactive map of real time air quality data.
2.23 LBE’s Air Quality Action Plan 2012 showed that the problems of air pollution are mainly caused by road traffic and are particularly marked alongside the borough’s major roads, including the A406, A10 and A1055 Mollison Avenue and Bullsmoor Lane. The M25 and A10 connection is an area which experiences a regular build-up of Heavy Goods Vehicles (HGVs) leading to high levels of air pollution.

2.24 The borough’s AQAP notes that whilst NO2 decreases have plateaued in recent years; PM pollution is continuing to decline.

2.25 In 2016, the London Atmospheric Emissions Inventory (LAEI) provided updated datasets which establishes seven AQFAs in the borough, identified in Figure 2.1 below. These seven AQFAs are generally concentrated around the A406, A10 and Bullsmoor Lane; which LBE has identified as the air quality hotspots.

2.26 Areas of poor air quality are strongly correlated with areas of relative deprivation and tend to be located in key corridors connecting east and west and north and south. This is evident in figure 2.1 where the greatest concentrations of NOx are concentrated in the south east of the borough, whereas the more affluent north west does not suffer the same problem.

* LBE note that this is extenuated by the physical and natural barriers in the east of the borough, which is characterised by arterial roads, railways and waterways, leading to communities that are located between sources of emissions and therefore pollution concentration zones.

**Future**

2.27 ULEZ will be expanded up to the A406 as of October 2021, which will result in the southern section of the borough being within the ULEZ which should help mitigate the air quality issues experienced in the south of the borough.

* In October 2019 the Mayor of London reported that since the introduction of ULEZ, NO2 emissions within the zone had been reduced by 36% between February 2017 – September 2019. None of the air quality monitoring sites located on ULEZ boundary roads have measured an increase in NO2 pollution levels since the scheme was introduced in April 2019 and that 13,5000 fewer polluting cars were being driven through London on a daily basis, six months after ULEZ’s introduction.

2.28 Figure 2.1 demonstrates that Bullsmore Lane is a key air quality hotspot, which is particularly affected by the build-up of HGVs accessing the M25 at Junction 25.

2.29 There is growing concern from local stakeholders about the impact of air pollution on the Epping Forest Special Area of Conservation (SAC) from traffic movements along the A406. With key development sites such as Meridian water with LBE’s boundary, the borough must carefully consider the impacts any development brings with regards to increased traffic on road infrastructure and the knock-on effect this may have on the SAC.

2.30 However, new development will likely present opportunities to place increasing focus on sustainable means of transport, particularly through densifying development at more sustainable locations such as near to transport hubs, particularly rail. This will help mitigate against future air quality concerns. Within LBE there are already two such programmes which are helping to deliver this objective:

* Cycle Enfield has been granted a £9 million Liveable Neighbourhood fund from TfL; and

* Lee Valley Rail Programme has delivered a new train station at Meridian Water and 5.5km of new track to enable two more trains per hour to run between Stratford and Meridian Water.

2.31 Broxbourne District Council is in the process of declaring a Clean Air Zone, which will charge road users to drive within the zone. This may have an impact on the future baseline situation due to traffic using other routes, as road users look to avoid charges.

---


2.32 A changing private vehicle fleet mix will also have its influence on air quality in the borough. LBE are installing five new rapid electric vehicle charges, to add to the borough’s current crop of 20 charging points. It is also important to note that as a city London expects the number of electric vehicles on the road to increase from 20,000 to 330,000 by 2025.16

Case Study: Waltham Forest’s Mini-Holland programme delivered cycling and walking routes across the borough. Since 2015, 22km of segregated cycle lanes have been constructed as well as 104 new pedestrian road crossings. In 2018, the borough commissioned Kings College London to study the impacts this programme had on air quality exposure between. The study focused on exposure in 2013, 2020 without cycling segregation, and 2020 with cycling segregation at seven of the introduced segregated cycle lanes and found that exposure reduced by between 15-25% for NO₂, and 6-13% for PM₂.₅.


---

Figure 2.1: Focus areas LAEI 2013 in Enfield – December 2016 update

LAEI (2016) Air Quality Data [online] available at: https://data.london.gov.uk/air-quality/
Key issues and objectives

The following key issues emerge from the context and baseline review:

- The entire borough has been declared an AQMA and there are seven AQFAs focused on the three main roads; A10, A406 and Bullsmoor Lane.
- The east and west equalities divide is mirrored in air quality issues within the borough, and there is also a broad concentration of poor air quality in the south of the borough.
- The ULEZ will be active in the southern section of the borough from 2021 leading to benefits but also potentially knock on implications for other areas due to traffic re-routing.
- The borough is supportive of the ambitious London-wide air quality targets emphasised in the MES.
- Spatial strategy and policy must be set so as to direct development away from areas of poor air quality; direct development to locations where there will be lowest reliance on the private car and lowest likelihood of leading to problematic traffic congestion; and support low emission technologies and improvements to ‘sustainable transport’ infrastructure.

In light of the key issues discussed above it is proposed that the IIA should include the following objective:

Minimise air pollution, support reduced air pollution in existing hotspots and avoid the creation of new air pollution hotspots, contributing to the achievement of the national and London-wide targets.
3. Biodiversity

Introduction

3.1 ‘Biodiversity’ describes the biotic variation, from the level of genes to whole ecosystems, within a given area. Losing biodiversity erodes the functioning of our environment, which is critical for our economy and wellbeing: everything from flood mitigation and clean water, to crop pollination, climate regulation and good mental health can be related to biodiversity.

3.2 These benefits can be framed as ecosystem services flowing from a stock of ‘natural capital’ assets. Notwithstanding the limits of the metaphor, this ‘Ecosystems Approach’ is extremely important in public policy and has been mainstreamed through the international Convention on Biological Diversity (2000).\footnote{Convention on Biological Diversity (2000) COP Decisions [online] available at: https://www.cbd.int/decisions/cop/default.shtml?m=cop-05}

3.3 Despite being so important for sustainable development, biodiversity has declined rapidly over the course of the last 50 years, both nationally and internationally. The Organisation for Economic Co-operation and Development (OECD) predicts that biodiversity will continue decreasing by a further 10% by 2050.\footnote{OECD (2012) Environmental Outlook to 2050: The consequences of Inaction [online] available at: www.oecd.org/env/indicators-modelling-outlooks/49897175.pdf} The cost implications of this are significant, estimated at €14 trillion (equivalent to 7% of the world’s GDP) by 2050.\footnote{IEEP (2008) The cost of policy inaction; The case of not meeting the 2010 biodiversity targets [online] available at: https://ieep.eu/uploads/articles/attachments/137ae972-0286-4ae2-a965-698464ae2f2/copi_final_report_jun.pdf?v=63664509715}

3.4 The loss of biodiversity in the UK has been significant, rapid, and continues. The most recent State of Nature report looks at trends in our species from around 1970 to 2013 (the ‘long term’) and 2002 to 2013 (the ‘short term’).\footnote{RSPB (2016) State of Nature 2016 [online] available at: www.rspb.org.uk/globalassets/downloads/documents/conservation-projects/state-of-nature/state-of-nature-uk-report-2016.pdf} The index of change in abundance and occupancy of terrestrial and freshwater species has fallen by 0.4% each year over the long-term period, resulting in a statistically significant decline of 16% in total. Over the short-term period, the decline was 0.18% per year, and 3% in total. Although the rate of decline does appear to have slowed, the difference between long-term and short-term trends is not statistically significant.

3.5 The main causes of biodiversity loss in the UK include:

- Land use change (including direct land-take through urbanisation, or changes in land management, such as intensification of agriculture);
- Climate change;
- Hydrological change (e.g. drainage of wetlands or over-abstraction);
- Pollution (including nutrient-loading from air pollution);
- Invasive species, pests and disease;
- Disturbance including through recreational use; and
- Direct mortality (e.g. road casualties or predation from domestic cats).

3.6 Planning for new developments in LBE will have implications for a number of these causes of biodiversity loss, recognising that impacts will be both direct and indirect.

3.7 It is also the case that biodiversity gains through development can and should be achieved both at the scale of individual developments, and at wider functional scales. For example, a decision to focus development in the east of the borough, in close proximity to the Lee Valley Regional Park might lead to a business case for delivering habitat corridors through the developments, to help strengthen biodiversity connections within the borough.
Context review

National

3.8 Key messages from the NPPF in relation to biodiversity include:

- One of the three overarching objectives of the NPPF is to ‘contribute to protecting and enhancing our natural, built and historic environment’ including by ‘helping to improve biodiversity’.

- Plans should: distinguish between the hierarchy of international, national and locally designated [wildlife] sites; allocate land with the least environmental or amenity value, take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

- Planning policies and decisions should contribute to and enhance the natural and local environment by: protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with the statutory status or identified quality in the development plan); and minimising impacts on and providing net gains for biodiversity, including establishing coherent ecological networks that are more resilient to current and future pressures.

- To protect and enhance biodiversity and geodiversity, plans should:
  - Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation;
  - Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity; and
  - Take a proactive approach to mitigating and adapting to climate change, considering the long-term implications for biodiversity.

3.9 The Government’s 25 Year Environment Plan includes a commitment to “Embed an ‘environmental net gain’ principle for development, including housing and infrastructure.” The Plan goes onto say that this should be done through partnership working between local planning authorities and developers “…to mainstream the use of existing biodiversity net gain approaches within the planning system…”.

3.10 Biodiversity 2020: A strategy for England’s wildlife and ecosystem services’ is Defra’s national guidance on delivering the EU biodiversity commitments and sets out the strategic direction for biodiversity policy until 2020.

3.11 The UK Biodiversity Action Plan (BAP) identifies priority species and habitats requiring conservation action. Although the UK BAP has been superseded, BAP priority species and habitats have been used to draw up statutory lists of priority species and habitats in England.

3.12 Local authorities across the UK have a ‘biodiversity duty’ which means conserving biodiversity should be considered in all plan and policy making processes.
Regional

3.13 Key messages with respect to air quality from the Draft London Plan (2017) include:

- Policy G1 Green Infrastructure (GI) and the Natural Environment: This policy notes that a GI approach has a wide range of benefits, including conserving and enhancing biodiversity and ecological resilience.\(^{22}\)
- Policy G6 Biodiversity and access to nature: Sites of Importance to Nature Conservation (SINCs) should be protected but also stresses that development plan policies should “support the protection and conservation of priority species and habitats that sit outside of the SINC network”.
- Policy G7 Trees and woodlands: Highlights the importance of trees within the urban environment, with biodiversity functions being delivered through the provision of “extensive areas of habitat for wildlife, especially mature trees”.

3.14 One of the four main aims of the MES (2018) is for London to “be the world’s first National Park City where more than half of its area is green, where the natural environment is protected, and where the network of green infrastructure is managed to benefit all Londoners”. Part of this approach is to support local authorities and community groups in managing and valuing biodiversity better. There are a number of relevant proposals within the MES the contribute to meeting this overall aim:

- Proposal 5.2.1a The London Plan includes policies on the protection of SINCs (see above) and Regionally Important Geological Sites (RIGS);
- Proposal 5.2.1b The Mayor will develop a biodiversity net gain approach for London, and promote wildlife-friendly landscaping in new developments and regeneration projects; and
- Proposal 5.2.1d The Mayor will work with key partners to establish a cost-effective monitoring framework, to ensure important natural environment data is collected consistently to inform future decision making.

3.15 The Mayor’s All London Green Grid Supplementary Planning Guidance (2012) (ALGG) is the Mayor’s green infrastructure strategy, which includes a section dedicated to conserving and enhancing biodiversity.\(^{23}\) Many of the approaches set out in the ALGG also outline their importance in delivering biodiversity enhancements. The relevant sections of the ALGG will be explored in greater detail in Chapter 12 of this document.

Local

3.16 The borough’s Core Strategy (2010) notes a key issue is: “enhancing biodiversity and linking habitats via wildlife corridors particularly in areas deficient in open space in the east and south of the Borough”. There are a number of policies that seek to deliver this:

- Core Policy 35: Lee Valley Regional Park and Waterways. The policy seeks to work with all riparian stakeholders to restore and enhance the waterways.
- Core Policy 36: Biodiversity. The policy focuses on protecting, enhancing and restoring biodiversity interests within the borough, including parks, playing fields and other sports spaces, green corridors, waterways, sites, habitats and species identified at a European, national, London or local level as being of importance for nature conservation.

3.17 LBE’s adopted Development Management Document (2014) guides decisions on planning applications within Enfield, the policies set out within this document are linked to one or more of the Core Strategy (2010) policies, the policies specifically related to biodiversity are:

- DMD 78: Nature Conservation: Notes that development that has a direct or indirect impact on important ecological assets will only be granted permission if sufficient mitigation measures are demonstrated.
- DMD 79 Ecological Enhancements: Developments resulting in the creating of 100m^2 of floorspace or one net dwelling should provide on site ecological enhancements.

---

\(^{22}\) The draft London Plan notes that a GI approach takes a strategic, integrated approach to conserving, managing and delivering, green spaces, green roofs, urban trees and other natural and semi natural features to deliver a range of objectives.

• DMD 80: Trees on Development Sites: Notes certain stipulations when working with trees that exist on a site including the protection of trees with significant biodiversity benefits or covered by Tree Preservation Orders.

• DMD 81: Landscaping: Proposed developments must provide high quality landscaping that enhances the local environment.

3.18 LBE’s three area action plans follow the lead of the Core Strategy (2011) and the Development Management Document, noting the importance of protecting and enhancing the borough’s natural, for instance:

• North East Enfield Area Action Plan includes as a chapter titled ‘Green Network and Food Growing’ noting the importance to connect the area’s significant green spaces, including enhancing biodiversity by providing wildlife corridors.24

3.19 The borough published a Local Biodiversity Action Plan in 2011. The document sets out the framework to delivering conservation, enhancement and increased access to nature and sets out 27 objectives in order to achieve this, including:

• Objective 1: To review our Local Wildlife Sites regularly and designate and re-design;
• Objective 2: To implement ecological management plans for all Council managed Local Wildlife Sites by 2015, and to encourage other landowners to implement management plans on sites not managed by the Council;
• Objective 9: To ensure that new developments result in a net biodiversity gain; and
• Objective 12: To ensure that policies and plans refer to biodiversity conservation and the Biodiversity Action Plan where appropriate.

3.20 Lee Valley Regional Park Authority has a 2011 Development Framework that sets out the vision and objectives for the park. One of the six aims of the framework is biodiversity conservation and enhancement. The framework has five area proposals two of which are relevant and should be considered through the Local Plan evolution:

• Area 4: The Waterlands: Banbury Reservoir to Pickett’s Lock. This proposes to protect existing ecological value of the reservoir, create a key public waterside route and wildlife corridor, through schemes such as fringe habitats and reedbed enhancements. It also highlights a number of sites for new wildlife habitats across the area.
• Area 5: The Waterlands King George V Reservoir to Rammey Marsh. This proposes to restore river and wetland habitat on land south of Lea Valley Road including habitat provision for water vole. As above it notes the need to enhance public access to the park and protect existing wildlife such as nationally important wintering, moulting and feeding site for waterbirds at King George V reservoir

Baseline review

Current

3.21 Within the 8000-hectare authority boundary there are 25 designated SINCS and approximately 38% of the borough is covered by Green Belt land. The eastern section of the borough is dominated by the Lee Valley National Park. Despite the presence of these assets, the Mayor of London classifies 22% of the borough’s population as lacking access to nature. Figure 3.1 illustrates the extent of the borough’s habitats.

Figure 3.1 Broad habitats in Enfield’s open spaces

Internationally designated sites

3.22 Although there are no Special Area of Conservation (SAC) sites, the Epping Forest SAC sits within 0.5km of LBE’s border to the east of the borough. As discussed in Chapter 2, any development in the east of the borough will have to carefully consider the air quality impacts on the SAC. Similarly, through Duty to Cooperate workshops with neighbouring boroughs, neighbouring Epping Forest District Council (EFSC) highlighted concerns about recreational pressure on the SAC. This will require mitigation measures to protect the SAC; one option being considered is SAMM (Strategic Access Management and Monitoring) contributions within a 3km sphere of influence. Currently there are two mitigation zones (3 and 6.2 km) but this may change following analysis of the September 2019 visitor survey findings. It was noted the 6.2 km zone would impact LB Enfield (LBE) from approximately Winchmore Hill eastward – see Figure 3.2. Further information is presented within Appendix I.

3.23 The Lee Valley Ramsar site sits within 0.5km north of the borough, cradling the border between Essex County Council and Hertfordshire County Council. The Lee Valley is also designated as an Special Protection Area (SPA).

Nationally designated sites

3.24 The borough has one large SSSI, Chingford Reservoirs. The entire SSSI is 386.67ha all of which is considered to be in ‘Unfavourable – Recovering’ condition.

3.25 It should be noted that there are a number of SSSIs in close proximity to the borough:

- Walthamstow Reservoir SSSI – within 1km south of LBE;
- Epping Forest SSSI – within 0.5km to the east of LBE;
- Commill Stream and Old River Lea SSSI – within 1km north east of LBE;

• Waltham Abbey SSSI – within 1km north east of LBE; and
• Northaw Great Wood SSSI – within 2km north west of LBE.

3.26 There are no National Nature Reserves within or in close proximity to LBE. However, there are pockets of Ancient Woodland sites in the north east of the borough in the Enfield Chase area:

• Whitewebbs Wood;
• Little Beachhill Wood;
• Vault Hill Hood;
• Rough Lot & Moat Wood; and
• Oak Wood;

3.27 There are a number of Biodiversity Action Plan (BAP) Priority Habitats spread throughout the borough, which mainly consist of:

• Wood Pasture and Parkland;
• Good Quality Semi-Improved Grassland;
• Wet Woodland;
• Traditional Orchard; and
• Lowland Meadows.

Locally designated sites

3.28 Sites of Importance for Nature Conservation (SINCs) are local wildlife designations which collectively cover nearly 20% of London’s area. Within London there are three tiers of SINCs. Sites of Metropolitan Importance are the highest value, followed by Sites of Borough Importance and then Sites of Local Importance.

3.29 LBE has in total 41 SINCs:

• 7 Sites of Metropolitan Importance;
• 19 Sites of Borough Importance; and
• 15 Sites of Local Importance.

Future

3.30 Habitats and species have the potential to come under increasing pressure from the provision of new housing, employment and infrastructure in LBE, including at designated sites. This could include through increased disturbance (from recreation, noise and light) and atmospheric pollution as well as the loss of habitats and fragmentation of biodiversity networks. Habitat loss and fragmentation could be exacerbated by the effects of climate change, which has the potential to lead to changes in the distribution and abundance of species and changes to the composition and character of habitats.

3.31 The air quality impacts of any new development on the Chingford Reservoirs SSSI and neighbouring designated sites, particularly Epping Forest SAC will need to be considered carefully.

---

3.32 With LBE’s aim to reduce severance between the Lee Valley Regional Park and the borough’s communities, recreational impacts on the Chingford SSSI will need to be carefully assessed and managed. Similarly, with EFDC raising concerns about the recreational impacts on Epping Forest, LBE should consider mitigation options to relieve such pressure.

- The designations of SANGs (Suitable Alternative Natural Greenspace) in LBE’s Green Belt could provide a mitigation option to relieve the pressure on Epping Forest. There is also potential to mitigate through non-SANG strategic GI enhancements throughout the borough.

3.33 Future growth can also provide opportunities to increase integration of biodiversity habitats and networks into new development at a strategic scale. Therefore, new development could potentially unlock opportunities to protect and enhance important habitats and also enhance the connections between them, particularly through the provision and enhancement of green infrastructure. The below case study illustrates how this is possible in a London setting,

3.34 With London’s commitment to becoming the world’s first ‘National Park City’, the MES states the city’s intentions to improve ecological networks, connectivity and resilience across the city. It should, therefore, be expected that biodiversity related policies will be increasingly to the fore.

**Case Study:** Woodbury Wetlands Reservoir. The site which is located in the London Borough of Hackney opened in May 2016 following large scale regeneration of the Woodbury Down Estate. The 11-acre site is now a thriving habitat for migratory birds. Newly planted reedbed extensions provide a haven for waterfowl. The reservoir is now designated a site of Metropolitan Importance for Nature Conservation and crucially provides access to high quality natural environment within a densely built urban area.

![Figure 3.3 Picture of the Woodbury Wetlands Reservoir](https://www.wildlondon.org.uk/nature-reserves/woodberry-wetlands)

---

30 A SANG is an area of open space that can be designated for enhancement, designed to attract visitors to enjoy the natural environment as an alternative to a SPA. The primary aim of a SANG is to protect the biodiversity within the SPA, which usually results in a levy being charged to new developments in the area of the SANG.

Key issues and objectives

3.35 The following key issues emerge from the context and baseline review:

- The borough has one SSSI, Chingford Reservoirs, and 41 SINCs within its boundaries.
- The borough has a mosaic of BAP habitats, with particular concentrations in the north of the borough.
- The Lee Valley is a key strategic asset, with there being a need to improve access and appreciation alongside responsible management of sensitive wetland habitats.
- Epping Forest SAC is experiencing recreational use pressures and poor air quality which is putting the designated site’s biodiversity under pressure.
- Spatial strategy and policy must be set so as to direct development away from sensitive habitats, including areas of non-designated habitat that contribute to ecological connectivity; support the achievement of strategic objectives in respect of habitat creation/enhancement and improved ecological connectivity; and ensure that development is delivered in such a way that impacts to biodiversity are avoided, mitigated and compensated for in order to ensure that the Local Plan leads to a biodiversity net gain overall, i.e. at an agreed strategic scale that takes in the extent of landscapes units / ecological networks that extend beyond LBE.

3.36 In light of the key issues discussed above it is proposed that the IIA should include the following objective:

Deliver biodiversity net gain at an ambitious scale through a focus on avoiding/mitigating impacts to valued habitats and land that contributes to ecological connectivity and delivering targeted enhancements that improve the functioning of networks and are supportive of established conservation objectives.
4. Climate change adaptation

Introduction

4.1 The UK Committee on Climate Change introduces the situation nationally as follows:32

4.2 “Some degree of climate change is inevitable because of past and present greenhouse gas emissions. And even with strong international action to curb emissions, global temperatures still have a fifty percent chance of rising above 2°C by the end of the century.

4.3 In England temperatures are, on average, between 0.5 – 1°C higher than they were in the 1970s. Sea levels have risen by an average of 3 mm each year in recent decades and could increase by 12-76 cm by the end of the century (compared to 1990 levels).

4.4 Extreme weather events already cause damage and disruption. Around two thousand people across the UK died as a result of the 2003 heatwave. Insured losses from flooding and severe weather events have cost an average £1.5 billion per year over the past twenty years. In 2007 widespread flooding affected 55,000 homes, killed 13 people and cost the economy £3.2 billion. Events such as these are likely to become more frequent and severe as the climate changes. Preparing for climate change today in many instances will reduce the impact of future costs and damages and enable organisations and individuals to take advantage of any potential opportunities.”

4.5 The most recent climate projections for the UK (UKCP18), suggest that all areas of the country are projected to experience warmer wetter winters, hotter drier summers and more severe weather events. The projected changes in temperature and precipitation are summarised in Figure 4.1. Over the next few decades, changes in UK average temperatures are projected to be similar for the lowest and highest carbon emission scenarios. Therefore, regardless of mitigation progress, climate adaptation should be considered in all future planning.

![Figure 4.1: UKCP18 projected summer and winter changes by the 2070s](https://www.theccc.org.uk/tackling-climate-change/preparing-for-climate-change/)

4.6 In the context of exploring strategic options for LBE’s New Local Plan, key climate change adaption issues relate to flooding, heating and drought. Each of these topic headings be explored within this chapter.

4.7 Climate change will also impact on the baseline situation in respect of all other topics that are assigned a chapter within this report, including climate change mitigation. As such, climate change impacts/adaptation considerations will be considered in a number of chapters in this report.

32 [https://www.theccc.org.uk/tackling-climate-change/preparing-for-climate-change/]
Context review

National

4.8 Key messages from the NPPF in relation to climate change adaptation include:

- Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures. Policies should support appropriate measures to ensure the future resilience of communities and infrastructure to climate change impacts, such as providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure.
- Inappropriate development in areas at high risk of flooding should be avoided by directing development away from areas of highest risk (whether existing or future).
- Strategic policies should be informed by a strategic flood risk assessment and should manage flood risk from all sources.
- Plans should take account of the effects of climate change in the long term, taking into account a range of factors including flooding. Plans should also adopt proactive strategies to adaptation and manage risks through adaptation measures including well planned green infrastructure.
- Plans should reduce risk from coastal change by avoiding inappropriate development in vulnerable areas and not exacerbate the impacts of physical changes to the coast.

4.9 The UK Climate Change Risk Assessment is published on a 5-yearly cycle in accordance with the requirements of the Climate Change Act 2008. The Act requires the Government to compile an assessment of the risks for the UK arising from climate change, and then to develop an adaptation programme to address those risks and deliver resilience to climate change on the ground. For 2017 UK Climate Change Risk Assessment (CCRA), the Adaptation Sub-Committee of the Committee on Climate Change commissioned an evidence report 33 containing six priority risk areas requiring additional action in the next five years:

- Flooding and coastal change risks to communities, businesses and infrastructure;
- Risks to health, well-being and productivity from high temperatures;
- Risk of shortages in the public water supply, and for agriculture, energy generation and industry;
- Risks to natural capital, including terrestrial, coastal, marine and freshwater ecosystems, soils and biodiversity;
- Risks to domestic and international food production and trade; and
- New and emerging pests and diseases, and invasive non-native species, affecting people, plants and animals.

4.10 In 2018, Defra published the National Adaptation Programme (NAP)34, in response the 2017 CCRA. The NAP mirrors the evidence report in terms of the key issues listed above. The NAP explains the range of climate risks which affect the natural environment, critical infrastructure services, communities and buildings, local government and businesses. The importance of adapting to these climate challenges and transitioning to a low carbon economy are also set out.

4.11 Defra has published a report 2019 entitled ‘Preparing for a changing climate: Good Practice Guidance for Local Government’. The document sets out guidance on how local authorities can lead on climate change adaptation. The guidance sets out a range of actions that need to be taken in six key areas35:

- Corporate plans, policies and performance;

---

• Business and industry;
• Natural Capital and GI;
• Infrastructure;
• Land use planning and the built environment; and
• Public health, social care and community resilience.

4.12 The Flood and Water Management Act (2010)\textsuperscript{36} sets out measures to ensure that risk from all sources of flooding, not just rivers and seas, are managed more effectively. This includes: incorporating greater resilience measures into the design of new buildings; utilising the environment in order to reduce flooding; identifying areas suitable for inundation and water storage to reduce the risk of flooding elsewhere; rolling back development in coastal areas to avoid damage from flooding or coastal erosion; and creating sustainable drainage systems (SuDS).

4.13 The Committee of Climate Change published a 2012 report entitled ‘How Local Authorities Can Reduce Emissions and Manage Climate Change Risk’ \textsuperscript{37} which emphasises the crucial role councils have in helping the UK meet its carbon targets and preparing for the impacts of climate change. It outlines specific opportunities for reducing emissions and highlights good practice examples from a number of local authorities.

**Regional**

4.14 The London Environment Strategy (2018) (Chapter 8: Adapting to Climate Change) identifies a range of issues likely to be affected by climate change. It sets out the key threats, which are:

- Heat
- Flooding
- Drought

4.15 The chapter’s main aim is that ‘London and Londoners will be resilient to severe weather and longer-term climate change impacts. This will include flooding, heat risk and drought’. It goes on to set out potential adaptations and mitigation measures to tackle these threats, including:\textsuperscript{38}

- Policy 8.2.1 Reduce the risk and manage the impacts of surface water, sewer, fluvial, reservoir and groundwater flooding in London
- Policy 8.2.3 Increase the amount of sustainable drainage, prioritising greener systems across London in new development, and also retrofit solutions
- Policy 8.4.1 Ensure Londoners can prepare, respond to, and recover from the impacts of extreme heat and cold events in London
- Policy 8.4.3 Minimise the risk of new development overheating

4.16 Although there are no glaring policies solely dedicated to climate change adaptation, climate change and the consequences of it have been considered through the Draft London Plan (2017) and, as such, there are a plethora of polices that directly and indirectly cover climate change, a section have been highlighted:

- Policy GG6: Resilience: states the need to design infrastructure and buildings so that they are able to adapt to the changing climate.
- Policy D7: Public Realm: highlights the need for development proposals to consider local micro climates caused by Urban Heat island (UHI) effect as well as supporting rainwater management


\textsuperscript{37} CCC (2012), ‘How local authorities can reduce emissions and manage climate risks’, [online]; available at: https://www.theccc.org.uk/publication/how-local-authorities-can-reduce-emissions-and-manage-climate-risks/

\textsuperscript{38} Mayor of London (2018), ‘London Environment Strategy’ [online], available at: https://www.london.gov.uk/sites/default/files/london_environment_strategy_0.pdf
• Policy G5: Urban Greening: focuses on the need for site and building development to incorporate green strategies as an important element to mitigate against extreme weather conditions caused by climate change
• Policy SI5: Water Infrastructure: discusses the need to have infrastructure that can secure a water supply in times of water restrictions and highlights the need for sustainable drainage measures to reduce the risk of flooding

4.17 The MTS recognises the detrimental impact Climate Change will have on the city’s transport system and therefore has a section dedicated to the Natural Environment and Climate Change Resilience. It notes the key challenges to the transport system will be protecting rail assets and streets from flooding, managing heat on public transport and maintaining services during periods of extreme weather.

Local

4.18 LBE’s Core Strategy (2010) emphasises the need to respond to the local causes and impacts of climate change. It highlights the flood risk at Upper Lee Valley as a particular example, the core policies which emphasise the Council’s response to climate change adaptation are:

• Core Policy 20: Sustainable Energy Use and Energy Infrastructure: focusing on the need to retrofit developments to address the causes and impacts of climate change; and
• Core Policy 21: Delivering Sustainable Water Supply, Drainage and Sewerage Infrastructure: recognising the water stress climate change may cause in the borough, the policy seeks to ensure water infrastructure is managed effectively.

4.19 A Level 1 Strategic Flood Risk Assessment (SFRA) (2008) and Level 2 SFRA (2013) were commissioned by LBE. The Level 1 SFRA examined borough-wide flood risk and identified the requirement for more detailed analysis of flood risk in two priority regeneration areas, Meridian Water and Ponders End. The Level 2 SFRA is a more detailed assessment which makes specific spatial planning and development management recommendations for future development, it also maps out the distribution of flood risk and reviews the condition of flood defences in the borough. These studies are currently being updated.

4.20 The Enfield Surface Water Management Plan (2011) sets out “the preferred surface water management strategy for the borough. In this context surface water flooding from sewers, drains, groundwater and runoff from land, small watercourses and ditches that occurs as a result of heavy rainfall”.

4.21 LBE’s Local Flood Risk Strategy (2016) sets out how the borough and local partnerships can improve the management of local flood risk. It acknowledges that the rise of extreme weather conditions and urban creep means that existing drainage systems and flood defences are under constant pressure. It states that “Continual maintenance and improvements of flood defences are required just to keep flood risk at existing levels.”

4.22 LBE’s adopted Development Management Document’s (2014) ‘Chapter 8 Tackling Climate Change’ set out a number of adaptation related policies around the topic areas:

• Sustainable Design;
• Conserving water and
• Flood risk.

---

4.23 The borough’s area action plans do have a greater focus on mitigation than adaptation. However, there are a number of references to adapting to flood risk and future climate risks, for instance:

- The Edmonton Leeside Area Action Plan Policy EL8 acknowledges the need for development proposals to incorporate SuDS to increase climate resilience at Meridian Water.  

## Baseline review

### Current

4.24 Given there are three main adaptation areas, the borough’s current baseline will be reviewed through these issues: heat, flooding, and drought.

4.25 **Heat (UHI):**

- UHI results in summer temperatures in the centre of London reaching $10^\circ C$ warmer than rural areas around the city. This poses health risks to the vulnerable in society, particularly older people.

- UHI is primarily caused by the magnification of heat caused by the high density of buildings, impermeable materials and waste heat generated by transport and buildings. This should be taken into consideration when spatial development options, especially when focusing on town centre opportunity areas.

- Figure 4.1, below, demonstrates how Enfield is affected by summer heating in comparison to the rest of London. It demonstrates that the east of the borough is more adversely affected by heat.

4.26 **Flooding:**

- The River Lea is the borough’s primary watercourse, which runs north to south along the eastern boundary of the borough. It should be noted that the catchment for the river is highly urbanised.

- The main tributaries to the River Lea that flow through LBE are: Pymmes Brook, Salmons Brooks and Turkey Brook. They generally flow eastwards through Enfield towards the River Lea. The topography of Enfield follows that of these tributaries, with the borough generally sloping in an easterly direction towards the River Lea.

- Fluvial Flood Risk mapping provided in the LBE Level 1 SFRA shows that immediate land adjacent to the three main River Lea tributaries is categorised as fluvial flood zones 2 and 3. The area most at risk is the eastern length of the borough which follows the Lee Valley. This includes key urban development areas including Ponders Ends and Meridian Water.

- The Borough’s Surface Water Management Plan (SWMP) identifies 18 Critical Drainage Areas. The borough’s Level 2 SFRA notes that approximately 9,000 residential properties are at risk of a 1:1000-year surface water flood event.

4.27 **Drought:**

- London is considered to be one of the eleven most at risk cities to suffer from droughts. The MES highlights issues with the city’s water infrastructure, despite heavy investment leakage targets have not been met.

---


Figure 4.1: Land Sat image of land surface temperature in June 2011 in London\textsuperscript{45}

\textsuperscript{45} Arup (2014) Reducing Urban Heat Risk [online]
Future

4.28 Heat:

- The MES highlights the fact that poorer Londoners will be more adversely affected by UHI, given that Figure 4.1 demonstrates heat is more of an issue in the east of the borough, LBE will need to carefully consider the spatial distribution of development, it’s impacts on heat and the social and economic east/west divide in the borough.

- The UHI will only be exacerbated by the hotter and drier summers that the UK will experience in the future. This will make record breaking heatwaves such as the one experienced in 2018, 30x more likely.\(^{46}\)

- New developments must take into consideration design standards as set out in the London Plan’s cooling hierarchy\(^{47}\), as well as the use of green infrastructure and nature based urban design strategies to mitigate against the impacts of UHI.

4.29 Flooding:

- New development could have the potential to increase flood risk, especially in the east of the borough which has medium to high fluvial flood risk.

- Factors such as changing surface and ground water flows, overloading existing inputs to the drainage and wastewater networks or increasing the number of residents exposed to areas of existing flood risk.

- Widespread implementation of SuDS could help reduce the risk from surface water runoff, though it will continue to be important that new development avoids introducing large new areas of non-permeable hardstanding where possible. Whilst the protection of open spaces and green infrastructure in the east of the borough cannot be understated to help manage the risk of fluvial flooding from the River Lea.

- SuDs do not only bring flood risk mitigation but multiple benefits, including potentially helping to tackle the limited access to open spaces in the borough as well as physical and mental health benefits provided by such green infrastructure.

4.30 Drought:

- With the Met Office predicting hotter and drier summers and London being located in the driest region of the UK, the environmental impacts may include low flows in rivers and impacts on wetlands. This can also cause a reduction in water quality and damage to aquatic ecosystems.

- With a rising population and the need to explore new water sources, the MES forecasts London will have a water resource gap; of over 100m litres per day by 2040.

Key issues and objectives

4.31 The following key issues emerge from the context and baseline review:

- Without leadership from LBE on adapting to the climate emergency, the threat posed by flooding, heat and drought will only amplify.

- The urban heat island effect results in summer temperatures in the centre of London up to 10\(^{\circ}\)C warmer than more rural areas around the city, with the effects of heat more pronounced in the east of LBE, and the problem could worsen due to increased urbanisation.


\(^{47}\) In order to manage heat risk in London. The Draft London Plan (2017) sets out a six-point cooling hierarchy which major development proposals will have to be in accordance with:
1) Minimise internal heat generation through energy efficient design
2) Reduce the amount of heat entering a building through orientation, shading, albedo, fenestration, insulation and the provision of green roofs and walls
3) Manage the heat within the building through exposed internal thermal mass and high ceilings
4) Provide passive ventilation
5) Provide mechanical ventilation
6) Provide active cooling systems
• Fluvial flood risk provides the greatest flood risk concern, this is concentrated in the east of the borough along the River Lea.
• The risk of drought is only likely to increase across London given the growing demand for water and the impacts of climate change.

4.32 In light of the key issues discussed above it is proposed that the IIA should include the following objective:

Ensure resilience to climate change particularly mindful of the likelihood of climate change leading to problematic high temperatures, worsened flood risk and increased risk of drought

Figure 4.2: Flood risk in LBE

5. Climate change mitigation

Introduction

5.1 Anthropogenic climate change poses a serious threat to the society around the world, including the UK. Since the 1970’s, global temperatures have risen by almost one degree centigrade, with eight of the warmest years on record occurring since 2002. This increase in surface temperature has been primarily driven by a rise in atmospheric carbon emissions.

5.2 According to a report by the IPCC, serious global impacts would occur from global warming in excess of 1.5 degrees. The report finds limiting warming to 1.5 degrees would require urgent, far reaching mitigation actions across all sectors, in order to reach net zero emissions by around 2050. Despite current UK emissions being 43% below 1990 levels in 2017, achieving net zero emissions is a huge challenge that must be addressed by national government and local authority alike. In order to effectively mitigate climate change, planning efforts must ensure that growth is planned with a view to minimising emissions from both transport and the built environment.

5.3 Effective spatial planning is an essential aspect of how cities respond to climate change—successful responses by local planning authorities can protect both the local and global environment by controlling the emissions of greenhouse gases and identifying ways of minimising the locality’s carbon footprint. The role of local authority in climate change mitigation is not to be undermined—as per a report by the UNDP, over 70% of climate change reduction measures and up to 90% of climate change adaptation measures are undertaken by local government. This is because local policies reflect local circumstances and thus, local authorities can offer customised solutions to the most urgent local problems. Furthermore, in addition to aiding mitigation efforts, local planning can also improve resilience to climate change through well-planned development.

Context review

National

5.4 One of the three overarching objectives of the NPPF is an environmental objective to ‘contribute to protecting and enhancing our natural, built and historic environment’ including by ‘mitigating and adapting to climate change’ and ‘moving to a low carbon economy.’ The planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure.

5.5 Local Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures. Policies should support appropriate measures to ensure the future resilience of communities and infrastructure to climate change impacts, such as providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure.

5.6 Local planning authorities should support community-led initiatives for renewable and low carbon energy, including developments outside areas identified in local plans or other strategic policies that are being taken forward through neighbourhood planning.

---

50 www.ipcc.ch/report/sr15
5.7 The UK Climate Change Risk Assessment is published on a 5-yearly cycle in accordance with the requirements of the Climate Change Act 2008. It required the Government to compile an assessment of the risks for the UK arising from climate change, and then to develop an adaptation programme to address those risks and deliver resilience to climate change on the ground. For both the 2012 and the 2017 UK Climate Change Risk Assessment, the Adaptation Sub-Committee commissioned an evidence report containing six priority risk areas requiring additional action in the next five years:

- Flooding and coastal change risks to communities, businesses and infrastructure;
- Risks to health, well-being and productivity from high temperatures;
- Risk of shortages in the public water supply, and for agriculture, energy generation and industry;
- Risks to natural capital, including terrestrial, coastal, marine and freshwater ecosystems, soils and biodiversity;
- Risks to domestic and international food production and trade; and
- New and emerging pests and diseases, and invasive non-native species, affecting people, plants and animals.

5.8 The UK Climate Change Act was passed in 2008 and established a framework to develop an economically credible emissions reduction path. It also highlighted the role it would take in contributing to collective action to tackle climate change under the Kyoto Protocol, and more recently as part of the UN-led Paris Agreement.

5.9 The Committee of Climate Change published a 2012 report entitled ‘How Local Authorities Can Reduce Emissions and Manage Climate Change Risk’ which emphasises the crucial role councils have in helping the UK meet its carbon targets and preparing for the impacts of climate change. It outlines specific opportunities for reducing emissions and highlights good practice examples from a number of local authorities.

5.10 The Committee on Climate Change’s (CCC) 2019 report: ‘Net Zero: The UK’s contribution to stopping global warming’ sets out the UK’s roadmap to net zero by 2050. The report assesses the country’s ability and the policy roadmap needed to reach zero carbon by 2050. The report recognises the important role local authorities play in reaching this target:

5.11 “They have important roles on transport planning, including providing high-quality infrastructure for walking and cycling, provision of charging infrastructure for electric vehicles, and ensuring that new housing developments are designed for access to public transport. They can improve health outcomes for people who live and work in the area by implementing clean-air zones that discourage use of polluting vehicles and other technologies.”

5.12 The Committee of Climate Change published a 2012 report entitled ‘How Local Authorities Can Reduce Emissions and Manage Climate Change Risk’ which emphasises the crucial role councils have in helping the UK meet its carbon targets and preparing for the impacts of climate change. It outlines specific opportunities for reducing emissions, concluding that local authorities can lead on:

- Reducing emissions in buildings, surface transport and waste, which together account for 40% of the UK’s GHG emissions;
- Improve energy efficiency of residential buildings and sustainable transport options;
- Support the decarbonisation of the power sector;
- Support investment in EV charging infrastructure;
- Reduce local authority estate emissions; and

---

• Use planning powers to reduce carbon emissions.

Regional

5.13 The Draft London Plan (2017) sets out an ambitious target for London to be zero carbon by 2050. To meet this there are clear areas of focus within the plan to reduce greenhouse gas emissions:

• **Transport**: 80% of all travel to be made by walking, cycling and public transport by 2041 and carbon free travel by 2050.

• **Low Carbon Infrastructure**: Decarbonisation of energy supply and building a low carbon, circular economy approach will be essential to becoming zero carbon by 2050. Meeting this target requires changes to the way we use and supply energy so that power and heat for our buildings and transport is generated from clean, low-carbon and renewable sources.

• **Sustainable Design**: The Plan has developed an energy hierarchy which should be used to inform the design, construction and operation of new buildings (see figure 5.1). Major developments should be net zero carbon by 2050. The plan notes that London’s homes and workplaces are responsible for producing approximately 78 per cent of its greenhouse gas emissions.

![Figure 5.1: The London Plan’s energy hierarchy and associated targets](image)

5.14 There are a variety of policies which are either focused on mitigating greenhouse gas emissions or contribute to meeting these targets, the most relevant are:

• Policy GG6 Increasing efficiency and resilience: This policy seeks to improve energy efficiency to help deliver the transition to a low carbon circular economy.

• Policy SI2: Minimising greenhouse gas emissions: This establishes the use of the energy hierarchy in Figure 5.1 and sets the target for major developments to be net zero-carbon. This policy also encourages boroughs to set up a carbon offset fund which the GLA will provide advice/support on.

• Policy SI3: Energy infrastructure: this policy sets out London’s approach to establishing the city’s future energy infrastructure including a focus on efficiency, reducing emissions and transitioning to a more diverse range of low and zero-carbon energy sources.

• SI7: Reducing waste and supporting the circular economy: The policy explains that emission reductions can be delivered through greater resource efficiency through moving to a circular economy, such as through reducing re-using and recycling waste.
• Policy T1: Strategic approach to transport: this sets out the overall approach to transport, with an aim to reduce dependency on cars.

• Policy T2: Healthy streets: Although not focused on emissions reduction, its aim is to get the public walking, cycling and using public transport more, which, in turn will result in emissions reductions.

• Policy T7: Freight and servicing: seek to reduce emissions from freight through sustainable last mile schemes and the provision of rapid electric vehicle charging points.

5.15 The Mayor’s Transport Strategy (MTS) provides greater detail on the city transport system’s contribution to reducing emissions. The MTS will be explored in greater detail in Chapter 13: Transport. However, the policies relevant to this chapter which include actions on greenhouse gas emission reductions are:

• Policy 6: The Mayor will work towards reducing emissions of all types, promoting electrification, traffic restrictions/regulations and road charging.

• Policy 7: Which focuses on the role of transport in London becoming a zero carbon city by 2050

• Policy 23: This policy covers a wide range the mayor will explore and manage new transport services in London so they support the healthy streets approach, encourage sustainable modes of transport and reduce carbon emissions

5.16 Chapter 6 of the MES is titled “Climate change mitigation and energy”. This provides greater detail on the road map to becoming zero carbon in 2050 set out in the Draft London Plan (2017). Figure 5.2 is extracted from the MES and demonstrates the sources of greenhouse gas emissions in London, to provide some insight into the sectors that contribute most to London’s emissions.

Figure 5.2: London-wide 2015 greenhouse gas emissions by sector
Local

5.17 LBE’s Core Strategy 2010 includes a number of climate change mitigation related policies:

- Core Policy 20: Sustainable Energy Use and Energy Infrastructure: The policy describes a range of measures to reduce greenhouse gas emissions from ensure new developments and retrofitting existing developments by minimising energy use, using renewable energy sources and providing an efficient energy supply. It also notes the need to diversify the borough’s energy supply including low carbon energy and decentralised energy infrastructure.

- Core Policy 24: The Road Network: Part of this policy emphasises the need to encourage sustainable transport and supports the use of low carbon and electric vehicles.

5.18 LBE’s adopted Development Management Document’s (2014) ‘Chapter 8 Tackling Climate Change’ sets out a number of mitigation related policies around the following topic areas:

- Sustainable Design and Construction;
- Low Carbon Energy and Technology and
- Green Procurement and Waste Minimisation.

5.19 The three area action plans support the borough’s wider approach to climate change mitigation, mainly through energy efficiencies and technologies. For instance:

- The Edmonton Leeside Area Action Plan has ‘Chapter 6 Sustainable Energy’ and ‘Chapter 12 Promoting a Low Carbon Future’

5.20 As part of the Core Strategy’s evidence base, LBE produce a “Renewable Energy and Low Carbon Development Study”. Its role is to support the reduction of greenhouse gas emissions from residential and non-residential buildings as well as proposing planning policies to help reduce emissions.

5.21 LBE are currently developing a Climate Action Strategy, which will set out the borough’s approach to becoming carbon neutral. Although not yet published, this will set a new direction for borough in terms of climate mitigation, the main themes the strategy is focusing on are:

- Organisational emission reductions;
- The natural environment and climate resilience; and
- Borough wide emissions.

Baseline review

Current

5.22 Between 1990 and 2016 there was a 41% reduction in UK greenhouse gas emissions, which is encouraging, although accounting is complicated by the fact that polluting activities can be ‘exported’ to other countries. 56

5.23 In line with the key sectors for greenhouse gas reductions set out above, the description of the current and future baselines will focus on the themes of: Transport, Low Carbon Infrastructure and Sustainable Design.

5.24 To provide an overview, emissions are monitored and recorded at Local Authority level to enable high-emitting areas to identify and mitigate sources of emissions. This data also gives an insight into the current performance of LBE in comparison to London and the rest of country. This data is presented in Table 5.1 below, which illustrates that Enfield’s CO₂ emissions since 2005 have fallen in line with trends also evident in Greater London and England as a whole. Total combined per capita emissions from all sources from Enfield are lower than the averages for Greater London and for England as a whole. However, this is expected for local authorities in urban areas, as per capita, urban areas are less energy intensive, are in close proximity to employment, infrastructure and services which further reduce individual energy demands.

Between 2005 and 2016 LBE’s carbon emissions decreased by 28%. However, this coincides with the rate of reduction of carbon emissions falling\textsuperscript{57}, therefore, implying that it may become more difficult to continue this rate of reduction. It is important that local authorities continue to ramp up mitigation approaches in order to continue positive trends beyond the initial ‘low hanging fruit’ emission reductions.

In the summer of 2019 LBE declared a climate emergency, with this declaration came a commitment to making the authority carbon neutral by 2030 or sooner.

Table 5.1: Local authority CO\textsubscript{2} emissions estimates within the scope of influence of local authorities 2005-2016\textsuperscript{58}

<table>
<thead>
<tr>
<th>Emissions (t CO\textsubscript{2})</th>
<th>Industrial and Commercial</th>
<th>Domestic</th>
<th>Transport</th>
<th>Total</th>
<th>Total per Capita</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enfield</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>469.4</td>
<td>674.8</td>
<td>441.3</td>
<td>1,585.7</td>
<td>5.6</td>
</tr>
<tr>
<td>2006</td>
<td>612.7</td>
<td>670.4</td>
<td>441.8</td>
<td>1,724.9</td>
<td>6.0</td>
</tr>
<tr>
<td>2007</td>
<td>623.3</td>
<td>655.0</td>
<td>438.1</td>
<td>1,716.2</td>
<td>5.9</td>
</tr>
<tr>
<td>2008</td>
<td>480.8</td>
<td>654.6</td>
<td>417.3</td>
<td>1,552.3</td>
<td>5.2</td>
</tr>
<tr>
<td>2009</td>
<td>407.6</td>
<td>591.7</td>
<td>408.3</td>
<td>1,407.1</td>
<td>4.7</td>
</tr>
<tr>
<td>2010</td>
<td>425.6</td>
<td>633.3</td>
<td>407.5</td>
<td>1,465.7</td>
<td>4.8</td>
</tr>
<tr>
<td>2011</td>
<td>379.0</td>
<td>552.5</td>
<td>382.8</td>
<td>1,313.5</td>
<td>4.2</td>
</tr>
<tr>
<td>2012</td>
<td>411.4</td>
<td>595.7</td>
<td>403.4</td>
<td>1,409.5</td>
<td>4.4</td>
</tr>
<tr>
<td>2013</td>
<td>407.2</td>
<td>582.6</td>
<td>393.8</td>
<td>1,382.5</td>
<td>4.3</td>
</tr>
<tr>
<td>2014</td>
<td>355.2</td>
<td>484.7</td>
<td>396.5</td>
<td>1,235.2</td>
<td>3.8</td>
</tr>
<tr>
<td>2015</td>
<td>316.0</td>
<td>471.8</td>
<td>416.5</td>
<td>1,203.0</td>
<td>3.7</td>
</tr>
<tr>
<td>2016</td>
<td>272.7</td>
<td>444.4</td>
<td>422.9</td>
<td>1,138.6</td>
<td>3.4</td>
</tr>
<tr>
<td>2017</td>
<td>255.0</td>
<td>424.4</td>
<td>280.6</td>
<td>959.9</td>
<td>2.9</td>
</tr>
<tr>
<td><strong>Greater London</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>20,243.3</td>
<td>17,073.8</td>
<td>9,727.8</td>
<td>47,019.3</td>
<td>6.3</td>
</tr>
<tr>
<td>2006</td>
<td>21,612.0</td>
<td>16,979.7</td>
<td>9,581.4</td>
<td>48,144.2</td>
<td>6.3</td>
</tr>
<tr>
<td>2007</td>
<td>20,811.6</td>
<td>16,560.7</td>
<td>9,464.5</td>
<td>46,802.8</td>
<td>6.1</td>
</tr>
<tr>
<td>2008</td>
<td>21,062.3</td>
<td>16,728.6</td>
<td>8,941.0</td>
<td>46,694.5</td>
<td>6.0</td>
</tr>
<tr>
<td>2009</td>
<td>18,679.2</td>
<td>15,226.1</td>
<td>8,671.5</td>
<td>42,535.9</td>
<td>5.4</td>
</tr>
<tr>
<td>2010</td>
<td>19,851.2</td>
<td>16,327.1</td>
<td>8,553.2</td>
<td>44,687.8</td>
<td>5.5</td>
</tr>
<tr>
<td>2011</td>
<td>17,801.2</td>
<td>14,321.7</td>
<td>8,292.7</td>
<td>40,168.5</td>
<td>4.9</td>
</tr>
<tr>
<td>2012</td>
<td>19,376.4</td>
<td>15,424.1</td>
<td>8,197.4</td>
<td>42,947.7</td>
<td>5.2</td>
</tr>
<tr>
<td>2013</td>
<td>18,233.8</td>
<td>15,102.5</td>
<td>8,061.8</td>
<td>41,346.5</td>
<td>4.9</td>
</tr>
<tr>
<td>2014</td>
<td>15,255.2</td>
<td>12,589.0</td>
<td>8,063.4</td>
<td>35,856.8</td>
<td>4.2</td>
</tr>
<tr>
<td>2015</td>
<td>13,559.1</td>
<td>12,259.0</td>
<td>7,948.8</td>
<td>33,709.1</td>
<td>3.9</td>
</tr>
<tr>
<td>2016</td>
<td>11,679.5</td>
<td>11,539.9</td>
<td>8,017.8</td>
<td>31,177.9</td>
<td>3.6</td>
</tr>
<tr>
<td>2017</td>
<td>10,716.2</td>
<td>10,970.1</td>
<td>7,274.6</td>
<td>28,960.9</td>
<td>3.3</td>
</tr>
<tr>
<td><strong>England</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>149,791.9</td>
<td>126,251.6</td>
<td>85,626.0</td>
<td>85,626.0</td>
<td>7.1</td>
</tr>
</tbody>
</table>


Transport

5.27 LBE has the second highest rate of car ownership of London boroughs, this is compounded by the fact that LBE has the second lowest level of EV infrastructure of London boroughs.

5.28 Improving access and movement of public and sustainable modes of transport will be key to tackling this issue. Transport’s links with Climate Change mitigation will be explored in greater detail in Chapter 13. However, it should be noted there are some key current issues that are shaping the borough’s baseline transport emissions:

- There is a lack of public transport connectivity between the east and west of the borough and with neighbouring boroughs; and
- The Cycle Enfield programme and recently confirmed liveable neighbourhood funding for Enfield Town are pushing the sustainable transport agenda in the borough.

Low carbon infrastructure

5.29 The local heat network (which is linked to the Edmonton EcoPark) is still being laid, the network is being focused around key developments areas. Barriers to the process revolve around the proximity to the source and digging up roads to lay pipes.

5.30 LBE has recently set up an organisation called Energetik. The company aims to provides a low carbon heat network to local residents and businesses. For instance, Energetik estimates that homes connected to their Meridian Water heat network will up to 80% less carbon dioxide emissions than if they had traditional heating systems.59

Sustainable design

5.31 In LBE’s soon to be published Climate Action Strategy it is estimated that the borough’s housing stock produces 32,000 tonnes of CO2 per annum.

5.32 LBE have retrofitted ground source heat pumps for twelve tower blocks across the borough.

5.33 Figure 5.3 has been extracted from the borough’s ‘Renewable Energy and Low Carbon Study’ and it demonstrates the proportion of CO2 emissions from the borough’s existing building stock as of 2010. It demonstrates that there is significant opportunity to focus on retrofitting existing housing stock and ensure that sustainable design measures are delivered on new housing stock in order to reduce CO2 emissions from the borough’s buildings.

In general, there is more of a public focus on climate change and reducing emissions, this has been evident through the climate school strikes and Extinction Rebellion action. Such focus resulted in the 'green industrial deal' being central to the Labour party’s recent election manifesto. This demonstrates the greater political attention and public pressure there is to deliver on climate action.

The key London-wide targets that LBE will have contributory role in achieving are:

- To become a zero-carbon city by 2050; and
- A zero-carbon transport network by 2050.

As an organisation are targeting carbon neutrality by 2030 in their vehicle fleet and electricity supply.

LBE have met previous carbon reduction targets of 40% by 2020 and have renewed targets to meet 60% reductions by 2025. However, as noted in paragraph 5.21, LBE will have to be conscious that future carbon dioxide emissions reductions are likely to be harder to achieve, as many of the ‘quick wins’ have already been made.

**Transport**

LBE’s central focus in relation to transport emission reductions is delivering transport infrastructure to support a move to mixed model share and further EV infrastructure

- As set out in Chapter 2 LBE are installing five new rapid EV charging points, to add to the borough’s current crop of 20 charging points. It is also important to note that as a city London expects the number of electric vehicles on the road to increase from 20,000 to 330,000 by 2025.60

The London-wide focus on improving sustainable transport options should continue to grow, LBE should support this as an approach to deliver transport emission reduction. Additionally, the creation of Cycle Enfield shows that sustainable transport will be a key future consideration for the borough.

---

Low carbon infrastructure

5.40 Per capita emissions in LBE are likely to continue to decrease as energy efficiency measures, renewable energy production and new technologies become more widely adopted at a national scale. However, it should be noted that moving to renewable energy is likely to impact LBE with higher costs for heating the grid at an individual level. Therefore, the local plan will need to consider how this impacts the inequality in the borough in terms of fuel poverty. Whilst per capital emissions may reduce, population increase will challenge overall emission reductions.

5.41 The growing influence of Energetik on LBE’s housing stock should deliver heat and energy efficiency and therefore provide further emission reductions, however, this is reliant on residents signing up to the scheme.

5.42 The Edmonton Eco park which provides North London’s energy to waste facilities is being replaced to provide cleaner energy, it is expected that the new facility will have the carbon impact of saving the equivalent of 215,000 tonnes of carbon dioxide each year by diverting waste from landfill and generate low carbon heat and power to supply up to 127,000 homes.61

Sustainable design

5.43 The Future Homes Standard will be introduced by 2025, this will require new build homes to be future-proofed with low carbon heating and world-leading levels of energy efficiency.

5.44 LBE’s Climate Action Strategy is exploring an ‘energy-as-a-service’ model for the borough’s housing stock. There are a variety of approaches to this model, in essence it is a low carbon refurbishment model based on delivering a particular standard of energy service for a housing type. Housing types will buy a standard of energy rather than purchasing it on an individual basis, therefore delivering energy and cost efficiency.

5.45 Despite a city-wide focus on decentralised heat and power networks to deliver energy efficiency and emission improvements in new developments, there is further scope for greater delivery of sustainable design, as outlined in the case study below.

Case Study: Passivehaus: Passivehaus is a low carbon design approach driven by air quality and comfort. The approach is a leading international energy efficient design standard for buildings, although it is uncommon in the UK. Key features of a Passivehaus are:

- Very high levels of insulation;
- Extremely high-performance windows with insulated frames;
- An airtight building fabric; and
- A mechanical ventilation system with highly efficient heat recovery.

The aim is to make houses more energy efficient, therefore reducing energy demands and costs. In Germany monitoring of past performance indicates that the average energy saving of a passive house is 88%.

https://ecoarc.co.uk/passive-house-architect/

Key issues and objectives

5.46 The following key issues emerge from the context and baseline review:

- Falling CO₂ emissions in LBE broadly reflect a UK-wide trend, though emissions per capita in Enfield are lower in relation to those of Greater London overall and of England as a whole.
- Climate action has taken centre stage politically across the nation and this has resulted in many local authorities including LBE declaring a climate emergency and setting a carbon neutrality objective.
- The Local Plan must focus on minimising per capita emissions from both transport and the built environment, including by minimising need to travel, supporting modal shift away from the private care, supporting investment in strategic ‘sustainable transport’ infrastructure including mass transit routes and electric vehicle charging points, supporting decentralised low carbon heat/power generation including heat networks and supporting standards of ‘sustainable design and construction’ that exceed the requirements of building regulations.
- There is also a role to play in respect of supporting carbon sequestration through tree planting and other natural environment interventions, and in respect of supporting the green economy.

5.47 In light of the key issues discussed above it is proposed that the IIA should include the following objective:

Ensure the Local Plan serves to minimise LBE’s per capita CO₂ emissions such that the borough is on track to achieve carbon neutrality by 2030.
6. Communities

Introduction

6.1 A Local Plan aims to deliver a growth strategy that tackles concerns and provides benefits for all residents. Through delivering housing, infrastructure, services and design a Local Plan can provide the tools to resolve challenges faced by a local authority. As such it is important to understand the socio-economic issues faced in a local authority.

6.2 Between 2001 – 2018 Enfield’s population has grown significantly by 6.8%. High growth is predicted to continue with the population predicted to grow by a further 51,000 to around 390,000 by 2036. This increase in population will provide challenges in keeping up with the demand for homes, community and physical infrastructure and jobs. An ageing population will likely create more complex challenges through the requirement of bespoke housing solutions and a different type of environment, additional demand on health care facilities. The Local Plan will have to consider these future requirements as well as providing solutions to current issues faced, such as growing inequality.

6.3 LBE faces similar issues present throughout London, in particular social inequality and deprivation. LBE is ranked as the 12th most deprived borough in London, 50% of the borough’s wards are among the 20% most deprived in England. To work towards minimise these inequalities, understanding the borough’s demographic is an essential element to any Local Plan.

6.4 Social inclusion is a key aspect of sustainable communities and many interlinked factors are important in ensuring that both individuals and areas are able to fully participate in society. Poor housing, for example, can be compounded by unemployment, low incomes, poor health, high crime, discrimination, and other social factors. Inclusive design can be a tool to support the integration of communities and reduce issues of isolation. Furthermore, given LBE’s rich diversity in ethnicity and communities, the Local Plan will need to be mindful of the differing needs of all groups in society; from ensuring there is a range of religious facilities within the borough to enhancing accessibility and engagement within the Local Plan process through language considerations.

Context review

National

6.5 The NPPF (2018) discusses communities under the headings ‘Delivering a sufficient supply of homes’, ‘Ensuring the vitality of town centres’ and ‘Promoting healthy and safe communities’. Key messages from the NPPF include that planning policies should:

- Provide the social, recreational and cultural facilities and services the community needs, such as local shops, meeting places, sports venues, open space, cultural buildings, public houses and places of worship, whilst guarding against the unnecessary loss of community facilities and services.
- Retain and develop accessible local services and community facilities in rural areas.
- Ensure that developments create safe and accessible environments where crime and disorder, and the fear of crime, do not undermine quality of life or community cohesion. Places should contain clear and legible pedestrian routes, and high-quality public spaces, which encourage the active and continual use of public areas.
- Enable and support health lifestyles through provision of green infrastructure, sports facilities, local shops, access to healthier food, allotments and layouts that encourage walking and cycling.
- Ensure that there is a ‘sufficient choice of school places’ and take a ‘proactive, positive and collaborative approach’ to bringing forward ‘development that will widen choice in education’.
6.6 The Equality Act (2010) was brought in to reduce inequality and discrimination and ensure all members of the public are provided with equal opportunities. The Act covers nine protected characteristics - age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex, sexual orientation, marriage and civil partnership. The public sector equality duty, set out in Section 149 of the Equality Act, requires public bodies to give due regard to the need to: promote equality of opportunity; tackle unfair discrimination and to promote good relations between different groups.

6.7 The Health and Social Care Act 2012 transferred responsibility for public health from the NHS to local government, giving local authorities a duty to improve the health of the people who live in their areas, and requiring a more holistic approach to health across all local government functions.

6.8 The 2018 National Adaptation Programme (NAP) explains that: “Climate change will impact areas that support our wellbeing and health, including planning, community development, emergency response, health and social care system, historic places and cultural heritage.”

6.9 The 25 Year Environment Plan includes a focus on connecting people with the environment to improve health and wellbeing. One stated aim is to “help people improve their health and wellbeing by using green spaces including through mental health services”, whilst another is to “encourage children to be close to nature, in and out of school, with particular focus on disadvantaged areas.”.

6.10 The Government’s 2019 Integrated Communities Strategy focuses on improving community cohesion through tackling inequalities experienced through education and employment and supporting cultural sharing and cohesion. In order to address discrimination, disparity between sections of the community must be addressed. This is supported by the Local Government Association’s guidance document to local authorities ‘Building cohesive communities’.

Regional

6.11 The Draft London Plan (2017) notes that a key principle in the development of policies was to deliver equality for all Londoners and tackle rising inequality in the city. There are a number of polices focused on delivering a London for all and thus having a focus on communities:

- GG1: Building strong and inclusive communities: This is focused on ensuring educational and economic opportunities are available for all Londoners. It notes that a significant problem is the uneven distribution of wealth across the city. It also notes that urban design plays a role in developing community centres that are accessible and benefit all.

- Policy SD6: Town centres and high streets: London’s town centres should encourage “strong, resilient, accessible and inclusive hubs with a diverse range of uses that meet the needs of Londoners” including civic, community and social uses. The policy stresses the importance of town centres in “building sustainable, health and walkable neighbourhoods”.

- Policy SD10: Strategic and local regeneration: The policy seeks to focus on delivering development that is sensitive of the local context and using regeneration as a tool to tackle spatial inequalities.

- Policy S1: Developing London’s social Infrastructure: This policy focuses on the need for developments to contribute towards infrastructure that supports good quality of life, which is listed to include health provision, education, community, play, youth, recreation, sports, faith, and emergency facilities.

6.12 The Mayor of London has published an ‘Equality, Diversity and Inclusion Strategy’ (2018) which sets out the Mayor’s approach to creating a fairer, more equal and integrated city. It sets about the approach to tackling London’s high levels of inequality and discrimination. The strategy explores this through six key themes:

- A great place to live;
- A great place for young people;

---


• A great place to work and do business;
• Getting around;
• A safe, healthy and enjoyable city; and
• Leading by example.

Local

6.13 LBE’s Core Strategy (2010) focuses on communities in the section ‘Core Policies for Housing and Services’. The strategy acknowledges the rises in deprivation in the borough since 2001, with health inequality, deprivation and child poverty having all risen. It notes that, at the time, the east and south of the borough were faring significantly worse than the rest of Enfield, with some neighbourhoods amongst the most deprived in Britain. Additionally, Enfield had the 3rd highest level of inequality in London. This resulted in a policy focus on communities and inequality, a selection of the most relevant are:

• Core Policy 8: Education: This seeks to improve the health, lives and prosperity of LBE’s youth through investment in education facilities that meet the needs of existing and new communities.
• Core Policy 9: Supporting Community Cohesion: This looks at tackling the misbalance of access to public services across the borough and supporting area-based interventions to tackle social disadvantage.

6.14 LBE’s Development Management Document (2014) has a chapter of policies dedicated to Community Infrastructure. ‘Chapter 3: Community facilities’ focuses on the need to deliver public services, promote inclusive communities and facilitate social interaction.

6.15 The three area action plans all consider the need to enhance community facilities to meet the needs of LBE’s evolving population. For instance, a significant element of the North Circular Area Action plan’s vision is to “promote social inclusion, tackle deprivation and provide new employment opportunities”.

6.16 In 2012, LBE published its strategy for valuing diversity and equal opportunity called ‘Equal Opportunity for All’. This is currently being updated and will focus on three key areas:

• Fairness for all – focuses on reducing social inequalities and ensuring all residents have access to the same opportunities.
• Growth and sustainability – focuses on the long terms objectives of the borough including environmental objectives and transforming key areas and sectors in the borough.
• Strong communities: focuses on delivering high quality services to the borough’s communities and valuing diversity and promoting community cohesion.

Baseline review

Current

6.17 The discussion below is set out under a series of thematic sub-headings. One central issue that will become evident throughout this section is the pattern of spatial deprivation through an east -west divide, his is visually evident through figures 6.1 and 6.2.

Population

6.18 Census data and 2018 mid-year population data indicate the extent of population growth in the borough in comparison to London and England, see Table 6.1.
Table 6.1: Population growth 2011 – 2018

<table>
<thead>
<tr>
<th>Date</th>
<th>Enfield</th>
<th>London</th>
<th>England</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>312,466</td>
<td>8,173,941</td>
<td>53,012,456</td>
</tr>
<tr>
<td>2018</td>
<td>333,869</td>
<td>8,908,081</td>
<td>55,977,178</td>
</tr>
<tr>
<td>Population change 2011-2018</td>
<td>+6.8%</td>
<td>+9.0%</td>
<td>+5.5%</td>
</tr>
</tbody>
</table>

6.19 In general, the population of Enfield is growing at either end of the scale, with increasing numbers of under 18s and the elderly which will increase pressure on public services, in particular health and education. Tables 6.2 and 6.3 demonstrate how the age structure has developed since 2011.

Table 6.2: Age structure in 2011

<table>
<thead>
<tr>
<th>Age structure (% of total)</th>
<th>Enfield</th>
<th>London</th>
<th>England</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>22.40%</td>
<td>19.88%</td>
<td>18.90%</td>
</tr>
<tr>
<td>16-24</td>
<td>12.16%</td>
<td>12.33%</td>
<td>11.90%</td>
</tr>
<tr>
<td>25-44</td>
<td>30.45%</td>
<td>35.53%</td>
<td>27.50%</td>
</tr>
<tr>
<td>45-59</td>
<td>18.20%</td>
<td>17.00%</td>
<td>19.40%</td>
</tr>
<tr>
<td>60+</td>
<td>16.80%</td>
<td>15.26%</td>
<td>22.30%</td>
</tr>
<tr>
<td>Total population</td>
<td>312,466</td>
<td>8,173,941</td>
<td>53,012,456</td>
</tr>
</tbody>
</table>

Table 6.3: Age structure in 2018 – mid-year

<table>
<thead>
<tr>
<th>Age structure (% of total)</th>
<th>Enfield</th>
<th>London</th>
<th>England</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-15</td>
<td>22.87%</td>
<td>20.59%</td>
<td>19.20%</td>
</tr>
<tr>
<td>16-24</td>
<td>10.29%</td>
<td>10.47%</td>
<td>10.73%</td>
</tr>
<tr>
<td>25-44</td>
<td>29.52%</td>
<td>34.39%</td>
<td>26.28%</td>
</tr>
<tr>
<td>45-59</td>
<td>19.68%</td>
<td>18.41%</td>
<td>20.17%</td>
</tr>
<tr>
<td>60+</td>
<td>17.64%</td>
<td>16.13%</td>
<td>23.62%</td>
</tr>
<tr>
<td>Total population</td>
<td>333,869</td>
<td>8,908,081</td>
<td>55,977,178</td>
</tr>
</tbody>
</table>

6.20 LBE has a rich and diverse ethnic make-up. Based on 2018 ethnicity estimates, approximately 60% of Enfield residents identify as BAME. According to research undertaken in house by LBE’s Insight Team approximately 35% of the borough’s population identify as White British, 18% as Black, 10% as Asian, 25% as White Other, 6% Mixed Group and 6% identify as other ethnic group. ONS data based on 2018 mid-year projections rank Enfield as the 14th most diverse borough in London.

6.21 51% of LBE school pupils identify English as their first language, which is lower than London at 54% and England at 81%. Figure 6.1 demonstrates that wards in the east of the borough are more ethnically diverse than those in the west.

---


Figure 6.1: 2011 Census prevalence of non-white ethnic groups in Enfield

Deprivation and inequality

6.22 LBE ranks as one of the most deprived local authorities in the country with pockets of extreme deprivation in the east of the area, where the Lower Super Output Areas (LSOA) are among the 10% most deprived in England. Enfield is the 64th most deprived borough in England and the 12th most deprived in London.

6.23 Figure 6.3 presents the indices of multiple deprivation (IMD) (2015), which measure deprivation using nine indicators:

- Income deprivation;
- Employment deprivation;
- Education, skills and training;
- Health deprivation and disability;
- Crime;
- Barriers to housing and services;
- Living environment deprivation;
- Income deprivation affecting children; and
- Income deprivation affecting older people.
6.24 Figure 6.3 goes into greater detail to show the borough’s ranking on all nine IMD indicators demonstrating that Enfield ranks higher in all, but one (Living Environment), indicators of deprivation than the London average and the national median rank, indicating the severity of deprivation in the borough.

---

Throughout this report there is reference to the east and west divide that characterises LBE. This divide is evident across a number of IIA themes and can be traced back to underlying inequality and deprivation. The divide is partly driven by certain infrastructure – the A10 - and the nature of the housing stock on either side of this.

Census statistics provide an alternative framing by which to measure deprivation across four ‘dimensions’ of deprivation, summarised below:

- Employment: Any person in the household (not a full-time student) that is either unemployed or long-term sick.
- Education: No person in the household has at least a level 2 qualification and no person aged 16-18 is a full-time student.
- Health and disability: Any person in the household that has generally ‘bad’ or ‘very bad’ health or has a long-term health problem.
- Housing: The household accommodation is either overcrowded (with an occupancy rating of -1 or less), in a shared dwelling or has no central heating.

Table 6.4: Relative household deprivation dimensions (2011)

<table>
<thead>
<tr>
<th>Household deprivation (% of total)</th>
<th>Enfield</th>
<th>London</th>
<th>England</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household not deprived in any dimension</td>
<td>36.12%</td>
<td>39.42%</td>
<td>42.50%</td>
</tr>
<tr>
<td>Deprived in 1 dimension</td>
<td>34.26%</td>
<td>34.23%</td>
<td>32.70%</td>
</tr>
<tr>
<td>Deprived in 2 dimensions</td>
<td>21.82%</td>
<td>19.19%</td>
<td>19.10%</td>
</tr>
<tr>
<td>Deprived in 3 dimensions</td>
<td>6.81%</td>
<td>6.26%</td>
<td>5.10%</td>
</tr>
<tr>
<td>Deprived in 4 dimensions</td>
<td>0.99%</td>
<td>0.91%</td>
<td>0.50%</td>
</tr>
</tbody>
</table>

Table 6.4 presents the census data of relative deprivation in LBE, by calculating the deprivation by household. It demonstrates that a lower percentage of households in LBE demonstrate zero dimensions of deprivation in comparison to London and England. As one adds dimensions of deprivation LBE demonstrates slightly higher percentages than London and England. This infers that LBE in general suffers from greater household deprivation than London and England.

However, this does not consider and demonstrate is the unequal distribution of deprivation across the borough, the below case study puts a lens on this, through a study exploring deprivation in Upper Edmonton.

Case Study: Multiple indicators of inequality in Upper Edmonton: It should be noted that this case study has been extracted from a research paper commissioned by the Enfield Racial Equality Council and undertaken by Middlesex University’s Social Policy Research Centre.

Upper Edmonton is the most south easterly ward in the borough. It is predominantly populated by a young BAME population with high birth rates and is amongst the 10% most deprived wards in England. As of 2013, unemployment was at a rate of 6.7% and crime levels were amongst the highest in the borough. Life expectancy again highlights the relative inequality in comparison to the rest of the borough, with male life expectancy at 75.5 years and female at 76.7 years, whereas as a borough the life expectancy of a man was 80.2 years and 83.0 years for a woman. The report goes on to note that health indicators such as obesity, smoking and prevalence of premature deaths are above borough average. It also notes that transport infrastructure is weak; tube and rail services are sparse and so the area relies almost exclusively on bus services.

Education

6.29 In the last decade, the UK has seen a movement towards attainment of qualifications of the highest levels (Level 4 and above) and away from formal qualifications or qualifications at the lowest levels (less than Level 2). Between 2003-2013, the percentage of adults qualified to Level 4 rose from 26.8% to 37.5\(^{68}\). Over the same time period, the percentage of those with low to no qualifications fell from 34.1% to 23.4\(^{69}\).

6.30 In order to increase both the quality of education and the density of schools in the borough, the council introduced the School Expansion Programme (SEP) in 2013. According to the borough’s website, “the SEP has been successfully meeting the borough’s increased demand for extra primary school places by constructing new buildings, classrooms, specialist facilities and play spaces. [It] works to expand and improve primary schools began in 2010, and the multi-million-pound expansion programme has provided over 8,000 additional, permanent school places for local children.”

6.31 As per the draft New Local Plan 2036, there are presently 66 primary schools, 18 secondary schools and 3 all through schools, accommodating over 50,000 pupils in Enfield. In addition to these schools, there are six special schools in order to support Enfield’s most vulnerable students.

Table 6.5: Educational Qualifications, 2011 Census

<table>
<thead>
<tr>
<th>Qualifications</th>
<th>%</th>
<th>London Avg No./%</th>
<th>Relative % difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Qualifications</td>
<td>23.0</td>
<td>17.6</td>
<td>30.7</td>
</tr>
<tr>
<td>Level 1 only</td>
<td>12.9</td>
<td>10.7</td>
<td>20.6</td>
</tr>
<tr>
<td>Level 2</td>
<td>13.8</td>
<td>11.8</td>
<td>16.9</td>
</tr>
<tr>
<td>Level 3</td>
<td>10.5</td>
<td>10.5</td>
<td>0.0</td>
</tr>
<tr>
<td>Level 4 and above</td>
<td>28.7</td>
<td>37.7</td>
<td>-23.9</td>
</tr>
</tbody>
</table>

6.32 Table 6.5 above shows the level of qualifications as per the 2011 census. However, this does not consider and demonstrate the unequal distribution of deprivation across Enfield, explored through the above case study, which demonstrates the unequal geographies of educational deprivation across the borough.

6.33 Crucial to the discussion around educational inequality is the geographically unequal nature of its distribution. Geographical inequality in the UK has been recognised by several leading institutions including the Social Market Foundation (2016) and the Economic and Social Research Council (ESRC) (2012)—of the various kinds of spatial inequality present around the UK, educational inequality and its effects have been recognised as the “key to social mobility drive” (Social Mobility Commission) (2016). The Department for Education (2014) has also recognised the need to raise aspirations of disadvantaged secondary school students in order to alleviate basic educational and socio-economic inequity.

Case Study: Unequal Geographies of Education in Enfield: It should be noted that this case study has been extracted from a research paper published in the academic publication ‘Geoverse’ – ISSN 1758-3411. Enfield ranks 8th in London for both overall as well as educational inequality, which experts note, is characterised by a sharp east-west spatiality (Runnymede Trust, 2011; 2016). Following this research, the study found the same east-west contrast, noticing the highest educational deprivation displayed by an ‘expanded’ east, contrasting with lowest scores indicated by a ‘shrunken’ west. The study assessed the importance of three factors: (i) importance of school’s geographical location within Enfield, (ii) importance that the student’s family places on university progression and (iii) importance of an inspirational figure. The study found students that went to schools in the West had ‘higher’ educational aspirations, while students from the East had ‘lower’ educational aspirations. A major factor shaping the same related to how economic and social capital shaped access to education, and regions in the West harbour significantly higher amounts of capital.


---

\(^{68}\) Center for Cities (2018), ‘Cities Outlook 2018’ [online], available at: www.centreforcities.org/reader/cities-outlook-2018

Future

6.34 The Council would like to re-establish the equalities \textquoteleft excellence\textquoteright status by 2021. This is a priority for the chief executive and leader of the Council.

6.35 Enfield Poverty and Inequality Commission (EPIC) have recently published the \textquoteleft All things being equal\textquoteright report\textsuperscript{70}. The report examines a wide range of local data to understand the key issues faced by the borough. The report provides a list of 27 recommendations to tackle the growing inequalities, based on three interconnected themes:

- Living: To what extent does who we are and where we live affect our life changes and services we can access;
- Learning: What barriers prevent local people from accessing opportunities through education; and
- Earning: How can people from low income backgrounds be better supported to secure long-term economic prosperity.

6.36 New development could potentially provide opportunities to deliver enhancements to the borough\textquotesingle s green infrastructure and public transport networks, improving linkages between areas of greater deprivation and surrounding services and facilities.

6.37 LBE are focusing efforts to tackle the clear inequality divide in the borough, however given the multiple indices of deprivation that need to be resolved, this will require significant investment and action by multiple partners and stakeholders. LBE want to see a focus on retaining skills and jobs within the borough boundaries, this would help bring growth and inward investment to the borough which could be used to help tackle inequality.

6.38 New developments will bring in the opportunity to invest in public services and programmes that can help reduce the borough\textquotesingle s levels of inequality through CIL and S106 funding, however there are competing usage for this type of funding and other channels of investment will also be required.

6.39 LBE is updating its equality and diversity strategy which has an overriding aim to support community cohesion by enabling people to live side by side without segregation is perhaps an overriding priority.

Key issues and objectives

6.40 The following key issues emerge from the context and baseline review:

- LBE has a rich and diverse population in terms of ethnicity. It also has a growing population at either end of the age spectrum, both in terms of younger and older people.
- The borough is characterised by an east-west divide in terms of inequality and deprivation and is this is mirrored in a variety of indicators highlighted throughout this report.
- LBE is updating its equality and diversity strategy to deal with issues in the borough.

6.41 In light of these key issues, it is proposed that the IIA framework should focus on tackling the east-west spatial disparity through the following objectives:

\begin{itemize}
\item Support good access to services, facilities and wider community infrastructure, for new and existing residents, mindful of the potential for community needs to change over time.
\item Develop social cohesion through good urban design, using the healthy streets indicators and community spaces that act as a catalyst for community cohesion.
\item Seek to ensure new developments provide for existing communities delivering targeted actions including in respect of housing needs, community infrastructure and urban realm.
\end{itemize}

\textsuperscript{70} EPIC (2020) All thing being equal – the final report and recommendations of the EPIC
7. Crime and community safety

Introduction

7.1 A Local Plan provides the blueprint for the design standards of a local authority. An authority’s approach to design should aim to provide better quality living spaces which should take into consideration the safety of residents and users. Issues of crime and safety should be considered from the earliest stages of plan-making and development proposals, so that any potential crime and safety issues can be addressed, and a safe and secure environment can be achieved. By considering crime and community safety through a Local Plan a planning authority creates greater opportunities for its residents, which can result in greater economic prosperity, social cohesion and quality of life.

7.2 As discussed in the above chapter, design consideration should be explored to support the integration of communities. Through delivering inclusive design to support a diverse population, the built environment can encourage community cohesion and reduce isolation, which are both important elements in improving community safety.

Context

National

7.3 The NPPF discusses crime and community safety under the sections ‘Promoting healthy and safe communities’ and ‘achieving well designed places’. Key messages from the NPPF include that planning policies should aim to:

- Promote social interaction, including opportunities for meetings between people who might not otherwise come into contact with each other – for example through mixed-use developments, strong neighbourhood centres, street layouts that allow for easy pedestrian and cycle connections within and between neighbourhoods, and active street frontages.
- Ensure places are safe and accessible so that crime and disorder and fear of crime do not undermine community cohesion, which can be delivered through high quality public space, and clear, legible pedestrian routes.
- Anticipate and address possible malicious threats and natural hazards. Appropriate design and layout of developments should be informed by the most up to date information from the police and other relevant agencies to improve the resilience of communities.

7.4 Strategic Framework for Road Safety (2011) - sets out the governments approach to continuing to reduce killed and seriously injured casualties on roads.

Regional

7.5 The Draft London Plan (2017) emphasises the importance of designing out crime in order to contribute to the delivery of safe public spaces across the city. There are some policies that directly engage with this approach:

- Policy D2: Delivering Good Design: This policy includes a focus on ensuring that crime is taken into the design making processes.
- Policy D10: Safety, Security and Resilience to Emergency: This policy focuses on measures to design out crime and reducing the fear of crime, particularly at night.
- Policy HC6: Supporting the Night-Time Economy – although primarily focused on the growth of the night-time economy this policy recognises that an important element is ensuring safety as many night-time activities in the city involve the use of public space.
- Policy T2: Healthy Streets: An element of this policy is delivering public space that provides safety for all users.
7.6 The Mayor's Equality, Diversity and Inclusion Strategy sets out measures to ensure crime or fear of crime does not deter the public from using London's streets. It aims to focus on young people vulnerable to the potential of being a victim or offender in order to prevent crime, in particular it references knife crime.

7.7 London's Knife Crime Strategy (2017) sets out an approach to tackle the immediate threat of knife crime in London. The strategy includes reference to designing out crime in key hotspots and vulnerable geographic locations.

7.8 London's Police and Crime Plan 2017-2021 sets out the city's strategy to reduce crime and to improve policing services, especially at neighbourhood level.

7.9 The MTS has a 'Vision Zero' pledge which aims to eliminate all deaths and serious injuries from the London transport network by 2041. It is proposed that this will be delivered through safe speeds, safe streets, safe behaviours, safe vehicles and post-collision response.

Local

7.10 A focus of the Core Strategy (2010) is to improve health and wellbeing and as part of that address the fear of crime in vulnerable groups. Additionally, it notes that community cohesion is an important objective and the need to tackle high crime environments is highlighted:

- Core Policy 9: Supporting Community Cohesion: through the contribution of reducing crime, fear of crime and anti-social behaviour by using designing out crime through creating safe environments.

7.11 LBE's Development Management Document (2014) has a number of policies related tackling crime and improving community safety. It notes that in areas of high crime rate major developments will have to achieve Secured by Design certification, to ensure the borough is delivering secure and safe places. Specific policies related to this chapter include:

- DMD 35: Evening Economy: Notes that promoting a night time economy will need to be balanced with associated problems, such as anti-social behaviour and fear of crime.
- DMD 69: Light Assessment Reports should include mitigation measures to secure safer access routes and crime reduction.

7.12 LBE published a Community Safety Plan for 2017-2021. This sets out a strategy to tackle violent crime, keep young people safe, reduce burglary, promote cohesion and deal with anti-social behaviour.

7.13 LBE's Safeguarding Adolescents from Exploitation Strategy 2019-2022 states its role is to keep children safe, confident and happy, with opportunities to achieve through learning and reaching their full potential.

Baseline review

Current

7.14 It is noted that the overall crime rate in LBE is lower than the London average. According to official crime summary data published by the Metropolitan Police, the number of notifiable offences committed in Enfield between April 2018 and March 2019 was 28,773. However, this was an increase of around 11% on the previous 12-month period. Figure 7.1 presents the mix and types of crimes:

7.15 In general, crime is concentrated in the east of the borough, Southgate, Palmers Green and near the boundary with Haringey as well as around transport hubs.
As noted above LBE is experiencing an increase in crimes across the board. Through the interview process undertaken with LBE teams, as part of the context review, it was noted that there are three areas of particular concern for the borough:

- Drug dealing;
- Prostitution; and
- Serious youth violence.

There were 379 serious youth violence incidents between May 2018 – April 2019. Which was a 5% decrease on year before; despite this decrease, Enfield has the 3rd highest number of serious youth violence victims in London boroughs. Figure 7.2 shows how this issue is skewed to the east of the borough, in particular the south east.

---

Knife crime has been the headline issue in London in recent years. Enfield is ranked 7th in London for knife crime victims under 24 years old. As with serious youth violence, the incidents are concentrated in the south east of the borough, in particular the wards of Edmonton Green and Upper Edmonton.

Enfield has the largest youth population in London boroughs and a key crime risk is the school – transport corridors, which experience higher rates of crime.

TfL analysis of collision and casualty data shows that pedestrians between 0-19 years old are at high risk of being injured on London’s Streets. Whereas for cyclists, risk is highest for the 12 - 19 age group. According to TfL there were 1,192 casualties caused on roads in LBE. Of these 220 were pedestrians and 52 serious cyclists, whilst 668 were car occupants.\(^{72}\)

**Future**

LBE note that criminal confidence is impacted by level of surveillance. Open access design can mitigate this as it delivers ‘natural surveillance’\(^{73}\).

A key focus for LBE’s Crime and Community Safety team is to reduce the occurrence and risk of crime on the ‘school to transport’ corridors, the approach includes minimising the need to travel and designing safer routes.

---


\(^{73}\) Natural surveillance is a term used to describe environmental design that provides clear lines of sight to reduce the risk of potential crime. It is understood that through creating greater visibility in public spaces you can reduce the attractiveness of committing a crime.
LBE are developing a road safety action plan to reduce the risk caused by road danger which will influence the borough’s approach to streetscape design.

**Key issues and objectives**

7.24 Following a review of the context and baseline the key issues are:

- Crime, particularly serious youth violence and knife crime which is concentrated in the south east of the borough. Drug dealing and prostitution are related serious issues in the borough.
- Road safety for pedestrians and cyclists is also a key issue to be addressed through the Local Plan.
- Key issues in respect of crime and community safety relate closely to those discussed above under the ‘communities’ heading. There is a need to support high quality developments, improvements to estates that suffer from poor quality housing and a high quality public realm that supports integration of communities and natural surveillance including through the co-location of shops, services community centres and green spaces.

7.25 In light of these key issues, it is proposed that the IIA framework should include the following objectives:

Support targeted interventions to reduce crime and increase community safety, guided by LBE’s Crime and Community Safety team, and ensure high quality new developments that are future proofed.

Focus on delivering the ‘Vision Zero’ target for road safety; through safe street design using healthy streets principles to ensure pedestrians and cyclists can travel safely.
8. Economy and employment

Introduction

8.1 The economy, economic growth and development, employment, innovation and productivity are crucial aspects of a healthy, functional society. In order to raise the quality of life in any given place, the issues of economic development and employment need to be carefully considered in the creation of local plans. Despite being an outer London borough, Enfield experiences many of the same socio-economic issues faced by inner London. While vibrant and diverse, Enfield’s population makeup also presents several challenges for the Council. As will be made evident by this chapter, economic issues should be addressed alongside social issues in order to drive sustainable growth and encourage a socially inclusive borough.

8.2 Economic issues are crucial to plan creation and development since economic equity is an important aspect of the overall socio-economic well-being of a community. A plan emphasising community economic development simultaneously addresses interconnected social, environmental and economic issues recognises the importance of the connections between the local, regional and national layers of the economy.

Policy context

National

8.3 Key messages from the National Planning Policy Framework (NPPF) include:

- Planning policies should help build a strong, responsive and competitive economy by ensuring that enough land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure. Furthermore, it is recommended that local plans should:
  - Encourage sustainable economic growth within their clear economic vision and strategy.
  - Set criteria and identify sites for local investment to match the community needs.
  - Address investment barriers such as inadequate infrastructure, services/housing or poor environment.
  - Incorporate flexibility to account for unanticipated circumstances, allow new working practices and enable rapid responses to economic changes.

Figure 8.1: UK productivity relative to other G7 countries
8.4 Detailed insight on employment and economic growth is found in the UK Industrial Strategy (2017). The government’s current economic strategy is to increase productivity whilst sustaining record employment rates. The report states the importance of improving productivity while holding on to high employment without which raising living standards and the quality of life will be impossible (Figure 8.1). The government further stated its intent to strengthen the five foundations of productivity, further explaining the need to take on four ‘grand challenges’ or “society-changing opportunities…where we can build on our emerging and established strengths to become a world-leader” (Figure 8.2).

Figure 8.2: Overview of the Industrial Strategy
**Regional**

8.5 Important policies from the Draft London Plan (2017) include the following:

- Policy E4 (Land for industry, logistics and services to support London’s economic function) identifies the importance of “maintaining a sufficient supply of land and premises in different parts of London to meet current and future demands”. In the government’s plan for industrial property market area and borough-level categorisations, Enfield is categorised under ‘provide capacity’, that is, it is an area where strategic demand for industrial, logistics and related uses is anticipated to be the strongest.

- Policy E8 (Sector growth opportunities and clusters) involves the Strategic Outer London Development Centre (SOLDC) concept which targets the growth of business and employment opportunities beyond central London.

- Policy E11 (Skills and opportunities for all) seeks to promote inclusive access to training, skills and employment opportunities for employees in the city. The policy notes the importance of “support employment, skills development, apprenticeships, and other education and training opportunities in both the construction and end-use phases.”

8.6 The Mayor’s Economic Development Strategy for London Implementation Plan (2018) presents a framework for a fairer, more inclusive economy that “works for all”. The plan includes support to overcome barriers to work; better access to affordable transport, housing, childcare, and other costs of living; fair pay and employment practices amongst other things.

**Local**

8.7 Key messages from the adopted Core Strategy (2010) include:

- Core Policy 13 (Promoting Economic Prosperity): The core strategy’s overarching aim is to strengthen the economy in the long-run by adopting a proactive approach to investment and sustainable job growth. The council aims to protect and improve Enfield’s employment offer facilitating the creation of a minimum of 6,000 new jobs from 2010-2026, emphasising new growth in the Upper Lee Valley and Enfield’s town centres (Table 8.1).

<table>
<thead>
<tr>
<th>Spatial distribution of new jobs</th>
<th>By 2026</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Lee Valley</td>
<td>4,000</td>
</tr>
<tr>
<td>Other town centre and Place Shaping Priority Areas</td>
<td>2,000</td>
</tr>
<tr>
<td>Borough total</td>
<td>At least 6,000</td>
</tr>
</tbody>
</table>

- Core Policy 15 (Locally Significant Industrial Sites): The council will safeguard certain sites as Locally Significant Industrial Sites (LSIs) for a range of industrial uses.

- Core Policy 16 (Taking Part in Economic Success and Improving Skills): Through this policy, the council aims to tackle worklessness, create new jobs and ensure residents have access to both existing and new jobs.

8.8 Enfield’s Skills and Employment Strategy (2014) draws out a framework aimed at increasing jobs and wealth in Enfield, tackling unemployment and poverty and creating a more socially cohesive borough. Key messages from the strategy include:

- Prioritising local procurement to create local jobs;

- Implement plans such as the Enfield Town Centre Management Framework and the Town Centre Management Action Plans to increase retail opportunities in strategic locations through an increase in the number of new businesses;

- Providing jobs that are attractive to young people, women and disadvantaged members of the population.

---

The borough’s Development Management Document (2014) has ‘Chapter 4 Enfield’s Economy’ which sets out a number of economically focused development policies based on the following themes:

- Strategic Industrial Location (SIL)
- Locally Significant Industrial Sites (LSIS)
- Complementary and Supporting USES within SSIL and LSIS
- Preventing he Loss of Industrial and Employment Capacity
- New Employment Development
- Small Businesses

The area action plans all support economic growth within their plans for instance:

- North East Enfield Area Action Plan: Objective 3: Employment Growth and Local Economy – sets out the aim of increasing quality, operational efficiency and capacity of existing employment land and developing employment opportunities for all.
- Edmonton Leeside Area Action Plan: Policy EL2: Economy and Employment in Meridian Water: Focuses on transforming the economy to a high wage economic hub, delivering 6,000 – 7,000 new jobs.
Baseline review

Current

8.11 From the government policies and commitments highlighted above, it is evident that stagnant economic growth and worklessness are two of the biggest challenges faced by the borough. Figures 8.3 and 8.4 present important population data. This information is important in order to understand the data that follows.
Some key messages include:

- Enfield has a high proportion of economically inactive people—that is, members of the population that are not working and not seeking work—as compared with the London region. While most of these people were retired, students, long term sick or looking after the home, there was still a very significant proportion who were economically inactive for other reasons. These numbers compounded with the number of adults who were unemployed at the time produced a total of about 22,000 people in 2011 (9.8% of all 16-74-year olds), which was the 6th highest recorded rate in London.

- In 2011, there were roughly 13,192 unemployed people of whom 3,031 had never worked. As a proportion of those aged 16-74, the ‘never worked’ rate was the 7th highest in London, whilst the total unemployed rate was the 11th highest.

- The census also found 23.1% of all households in Enfield with dependent children have no adult in employment.

More recent data from the Enfield Corporate Plan (2018-2022) notes 69% of working age residents have been employed, speaking to positive progress since the census. The plan also notes that 92.6% of companies in Enfield are 'micro' businesses comprising 0-9 employees. However, despite this improvement, economic inactivity is yet a major concern—Enfield’s Employment and Skills Strategy (2014-2017) notes that 10.4% of Enfield's working age population is workless, which is significantly higher than the London overall of 8.9%.

Taken from Enfield’s Employment and Skills Strategy, Figure 8.5 highlights those areas of Enfield that have the highest amounts of economic inactivity and unemployment.

---

Figure 8.5: LBE claimant count by middle super output area, December 2013
Other key messages from the Strategy include:

- Enfield has a long-term unemployment rate of 1.4%, which is higher than the rate for London as a whole.
- Long-term unemployment amongst older people is increasing—43% people aged 50-64 remain unemployed following a year out of work, compared to 35% people aged 25-49 and 18.5% aged 16-24.
- Enfield is one of the local authorities containing youth employment hotspots. In August 2013, the recorded rate of NEET (not in Education Employment or Training) 16-19-year olds was 4.86%.
- Merely 72% of the working age population is economically active.

### Table 8.1: Highest level qualifications (2011 Census)

<table>
<thead>
<tr>
<th>Qualification and Students</th>
<th>Count</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>All usual residents aged 16 and over</td>
<td>242,465</td>
<td>100.0</td>
</tr>
<tr>
<td>No qualifications</td>
<td>55,736</td>
<td>23.0</td>
</tr>
<tr>
<td>Level 1 qualifications</td>
<td>31,158</td>
<td>12.9</td>
</tr>
<tr>
<td>Level 2 qualifications</td>
<td>33,389</td>
<td>13.9</td>
</tr>
<tr>
<td>Apprenticeship</td>
<td>4,715</td>
<td>1.9</td>
</tr>
<tr>
<td>Level 3 qualification</td>
<td>25,557</td>
<td>10.5</td>
</tr>
<tr>
<td>Level 4 qualification and above</td>
<td>69,627</td>
<td>28.7</td>
</tr>
<tr>
<td>Other qualifications</td>
<td>22,283</td>
<td>9.2</td>
</tr>
<tr>
<td>Schoolchildren and full-time students: Age 16 to 17</td>
<td>7,914</td>
<td>3.3</td>
</tr>
<tr>
<td>Schoolchildren and full-time students: Age 18 and over</td>
<td>16,901</td>
<td>7.0</td>
</tr>
<tr>
<td>Full-time students: Age 18 to 74: Economically active: In employment</td>
<td>5,325</td>
<td>2.2</td>
</tr>
<tr>
<td>Full-time students: Age 18 to 74: Economically active: Unemployed</td>
<td>1,976</td>
<td>0.8</td>
</tr>
<tr>
<td>Full-time students: Age 18 to 74: Economically inactive</td>
<td>9,556</td>
<td>3.9</td>
</tr>
</tbody>
</table>

Furthermore, skills and education are a key factor in driving economic growth. As per the table 8.1, the 2011 census indicates that Enfield has a higher proportion of residents with no qualifications (23%) and a lower proportion of residents with level 4 qualifications (28.7%) than the average for London (17.6% and 37.72%). The eight qualification levels in England are summarised below for context:

- Level 1 includes GCSE grades 3 to 1 or D to G;
- Level 2 includes GCSE grades 9 to 4 or grades A* to C;
- Level 3 includes AS levels and A levels;
- Levels 4 and 5 include NVQs at Level 4 and Level 5 respectively;
- Level 6 includes bachelor's degrees;
- Level 7 includes master's degrees;
- Level 8 includes doctoral degrees

Enfield's Skill strategy notes that the proportion of the working age population with no qualifications has declined by 30% since 2007. At 9.6% this was still higher than the London average of 8.4% at the time of publication.
Future

8.18 LBE’s Towards a New Local Plan 2036\(^7\) describes Enfield’s future as a borough “delivering a significant amount of new housing, driving growth, supporting businesses to thrive, and creating a place people are proud to live, work and visit.” Key plan objectives include:

- Directing new development opportunities back to main town centres;
- Relaxing retail policies and promoting development within individual residential curtilages; and
- Proactively managing and optimising low density industrial land to increase capacity for redevelopment for both housing and employment promoting development above single storey retail, supermarkets and other commercial uses.

8.19 Enfield’s Employment and Skills Strategy finds self-employment and entrepreneurship likely to rise in future years, stating as many as 50% of construction workers and approximately 20% of transport and communications workers were self-employed in 2005, meaning current figures are likely to be higher. The Strategy also finds that despite having the tenth highest unemployment rate in London, Enfield has a higher than average number of job vacancies compared to London—this highlights a mismatch in the labour market and skill-set, which suggest a need to raise skill levels and ensure job vacancies are filled locally.

8.20 Furthermore, only 72% of Enfield’s working age population is active—this means that even if every individual who is currently workless were to find employment, the Strategy notes, this would still fail to raise the proportion of people in work in Enfield to the Europe 2020 target of 75%.

8.21 Regeneration programmes are estimated to create approximately 15,000 jobs in Enfield over the next coming decades. Figure 8.6 taken from the strategy maps out the same.

---

The Enfield Corporate Plan (2018-2022) similarly details several upcoming large-scale regeneration schemes, such as the £6bn Meridian Water Masterplan Area which has the potential to provide up to 10,000 homes and thousands of jobs over a 20-year period.

It also serves this report to contextualise the above information in line with the broader aims outlined in the U.K’s Industrial policy. Some meaningful quotes from the Strategy follow:

• “We are a nimble economy and we can move quickly to take advantage of innovations. We also have smart consumers who reward entrepreneurs developing new products and services... We know that the earliest adopters of new technologies are able to reap the greatest rewards in terms of additional jobs and increased revenue.”

• “We have many strengths on which we can build, and some weaknesses we need to address. As we leave the European Union, we need to raise our game at home and on the world stage. This can be done if we seize the opportunities of the years ahead – and it is essential if the British people are to enjoy prosperous lives with fulfilling work and high-quality public services.”

• “We will also direct the government’s convening power, promote exports and inward investments, and build consumer trust in new technologies. Where appropriate, teams will develop ‘missions’ to tackle the Grand Challenges...”

Thus, Enfield will continue to grow, and investments will include transport, infrastructure enhancement and significant new employment and residential development. It will be important that this growth is matched by associated infrastructure enhancements as necessary.

**Key issues and objectives**

The following key issues emerge from the context and baseline review:

• With the right interventions and investment, there is significant opportunity for growth and development in Enfield, such that the borough can support the government’s Industrial Strategy aim to boost the productivity and earning power of people across the UK.

• There is a need to ensure that education and skills provision meet the needs of Enfield’s existing and future labour market and improves life chances for all, including by enabling older people and people with physical and mental health conditions to stay in employment.

In light of these key issues, it is proposed that the IIA framework should include the following objectives:

Support a strong, diverse and resilient economy that provides opportunities for all, including by supporting strategic industrial locations, the vitality of the borough’s town and local centres and a diversification of the employment opportunities locally, including employment within the social enterprise, voluntary and community sectors and a growing higher wage economy.
9. Health

Introduction

9.1 Health status is a key aspect of sustainable communities and is known to be influenced by a range of physical, social and economic factors including housing conditions and neighbourhood economic conditions.

9.2 Health tends to deteriorate in poor quality environments resulting in premature mortality and increased morbidity. Furthermore, there is a social gradient in health, with worse social position tending to be linked to worse health. Whereas protection of and accessibility to green and open spaces provides both physical and mental health benefits. The Local Plan process can directly influence this through policies such as ensuring new developments provide access to open spaces to mitigate against areas of open space deficiency.

9.3 As will be evident throughout this chapter, health is a cross cutting theme that is influenced by wider environmental and social determinants. For instance, there are clear linkages to promote physical activity through access and availability of sports and recreation facilities (green and open spaces) and promoting active modes of travel. National and regional policy documents acknowledge this fairly consistently and there is significant awareness of the link between spatial planning and health. These impacts on health have been explored in other areas of this scoping report. In particular within the following chapters:

- Air Quality;
- Climate Change Adaptation;
- Communities;
- Crime and Community Safety;
- Green Infrastructure and Landscape; and
- Transport.

Context review

National

9.4 Key messages from the National Planning Policy Framework (NPPF) include that planning policies should:

- Enable and support healthy lifestyles through provision of green infrastructure, sports facilities, local shops, access to healthier food, allotments and layouts that encourage walking and cycling.
- Take into account and support the delivery of local strategies to improve health, social and cultural well-being for all sections of the community.
- Help deliver access to high quality open spaces and opportunities for sport and physical activity to contribute to the health and well-being of communities.

9.5 The 2010 Marmot Review ‘Fair Society and Healthy Life’ explored and provided evidence of health being influenced by wider social determinants. As such, it set out policy recommendations to the national government to reduce health inequalities, one of which was to “create and develop healthy and sustainable places and communities”.\(^{77}\)

---

Public Health England has a key role in shaping health policy and practice across the country. In 2017 the organisation published ‘Spatial Planning for Health: An evidence resource for planning and designing healthier places’\textsuperscript{78}. The review provides guidance on the role of the built and natural environment in shaping health impacts. The review explores the impacts of neighbourhood design, provision of housing, transport and the natural environment on public health. The Government’s 25 YEP also highlights the health impacts of protecting and enhancing the natural environment. There is a particular focus on the physical and mental wellbeing benefits that the environment provides. The strategy highlights spatial planning approaches that can help deliver this, including planting one million trees in England’s towns and cities by 2022 and delivering additional green infrastructure.

NHS guidance on healthy urban development focuses on four key themes: healthy housing, active travel, healthy environment and vibrant neighbourhoods.\textsuperscript{79}

### Regional

The Draft London Plan (2017) Policy ‘GG3: Creating a healthy city’ recognises the cross-cutting nature of both healthcare provision and enabling healthy lifestyles, noting the significance at a London-wide scale of ensuring that “wider determinants of health are addressed in an integrated and coordinated way, taking a systematic approach to improving the mental and physical health of all Londoners and reducing health inequalities.”

The MTS recognises the importance of transport impacts on health through the Healthy Streets approach, which is explored in greater detail in Chapter 13. The MES acknowledges that air pollution, noise pollution, climate change and access to green spaces all pose significant risk to health and wellbeing of Londoners. Policies and proposals throughout the MES include a focus on the health outcomes.

The Health Inequalities Strategy (2018) presents a London-wide strategy for tackling identified ‘unfair differences’ in health outcomes across the city, focussing on the five core themes of healthy children, healthy minds, healthy places, healthy communities and healthy living.\textsuperscript{80}

### Local

LBE’s Core Strategy (2010) acknowledges that one of the borough’s key issues is reducing inequalities in health and wellbeing, particularly in the south and the east of the borough. The document sets out an overarching vision which is: ‘A healthy, prosperous and sustainable borough’.

Health and wellbeing is referenced throughout the Core Strategy, highlighting its cross-cutting nature. There is a policy focused on health and its wider determinants:

- Core Policy 7: Health and social care facilities and the wider determinants of health: This focuses on the health infrastructure in the borough. It also notes “A pattern of land uses will be promoted to encourage healthier lifestyles including Core Policies 11 (recreation), 25 (pedestrians and cyclists), 30 (environmental quality), 34 and 35 (greater use of parks and open spaces) and Chapter 9 Core Policies for Places”.

Similarly, health and wellbeing is referenced across LBE’s Development Management Document (2014), in particular in the following chapters;

- Chapter 2: Housing: Notes the need to provide health care infrastructure specialist housing provisions
- Chapter 3: Community Facilities: To support the objective to make LBE a prosperous and healthy borough, availability and accessibility to health care services is critical
- Chapter 10: Green Infrastructure: Notes the important health and wellbeing benefits provided by green spaces and the borough’s natural assets.


\textsuperscript{80} Mayor of London (2018), Health Inequalities Strategy [online], available at: https://www.london.gov.uk/what-wedo/health/health-inequalities-strategy
9.14 Through the area action plans the focus on health is generally supporting health and wellbeing through access to and availability of health infrastructure for instance:

- North Circular Area Action Plan: Policy 5 Provision of Modern Healthcare Facilities: Notes that development of 10 residential units or more will be expected to contribute towards the provision of health facilities within the area.

9.15 LBE’s Joint Strategic Needs Assessment (JSNA) (2013) sets out the evidence base relating to the borough’s health and wellbeing needs by exploring this through a variety of themes.

9.16 LBE published its Joint Health and Wellbeing Strategy 2014 – 2019, which built upon the JSNA evidence base. The purpose of this strategy is to set out an approach to improve health and wellbeing across the borough over a five-year period, it sets out five priority areas:

- Ensuring the best start to life;
- Enabling people to be safe, independent and well and delivering high quality health and care services;
- Creating stronger, healthier communities;
- Reducing health inequalities, with a focus on narrowing the gap in life expectancy; and
- Promoting healthy lifestyles and making healthy choices.

**Baseline review**

**Current**

9.17 The east/west spatial distribution of deprivation in LBE is correlated with health indicators. For instance, obesity is a one of the major health concerns in the borough, which is the 5th worst borough for childhood obesity in England. Figure 9.1 shows the percentage of children aged 10 - 11 years old who are overweight or obese across LBE demonstrating the east-west divide. Additionally, two thirds of adults in the borough are overweight or obese. As discussed in Chapter 2 air quality follows this east to west distribution, which is another health issue high on the agenda for LBE.
The east of the borough experiences significant food related deprivation, including a concentration of food banks and ‘food deserts’ (neighbourhoods that lack access to healthy food).

As of 2012 it was estimated that 18,769 people aged 16 and over were living with diabetes in LBE, projections suggested this would rise by 9.5% in 2020\(^\text{81}\). This is important as diabetes is a prime risk factor leading to cardiovascular diseases.

Figure 9.2 indicates that general health outcomes in LBE are slightly lower than for London as a whole but are broadly in line with figures for England. Overall 81.85% of residents in LBE report being in ‘Very good health’ or ‘Good health’ compared to 83.84% for London and 81.4% for England. However, 5.45% of LBE residents reported being in ‘bad health’ or ‘very bad health’, in comparison to 4.96% in London and 5.4% across England.

---

Table 9.1 shows that in terms of long-term health and disability LBE has better outcomes than England as a whole and is slightly below the London wide region.

Table 9.1 Long term health category

<table>
<thead>
<tr>
<th>Long term health category (% of total)</th>
<th>Enfield</th>
<th>London</th>
<th>England</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day-to-day activities limited a lot</td>
<td>7.26%</td>
<td>6.75%</td>
<td>8.30%</td>
</tr>
<tr>
<td>Day-to-day activities limited a little</td>
<td>8.10%</td>
<td>7.41%</td>
<td>9.30%</td>
</tr>
<tr>
<td>Day-to-day activities not limited</td>
<td>84.65%</td>
<td>85.84%</td>
<td>82.40%</td>
</tr>
</tbody>
</table>

It is also noted in LBE’s JHWS (2014) that 95% of the population is not physically active enough to maximise benefits to their health. Additionally, 18.5% of adults smoke and strikingly it was estimated that 4% of 11-15-year olds smoke.82

Table 9.2 Life expectancy at birth 2009 – 2013 83

<table>
<thead>
<tr>
<th></th>
<th>England</th>
<th>Enfield</th>
<th>Upper Edmonton</th>
<th>Cockfosters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>79.1</td>
<td>80.2</td>
<td>76.2</td>
<td>83.0</td>
</tr>
<tr>
<td>Female</td>
<td>83</td>
<td>83.9</td>
<td>78.7</td>
<td>86.2</td>
</tr>
</tbody>
</table>

Borough-wide inequalities are once again visible with figures of life expectancy at birth, demonstrated in Table 9.2. Despite having better life expectancy rates than averages for males and females than for England as whole, there is clear disparity between the east and west of the borough as demonstrated by comparison between the western ward of Cockfosters and the eastern ward of Upper Edmonton.

9.24 Health is a cross-cutting topic and there are synergies with other IIA themes. This is particularly the case in relation to green infrastructure and landscape, which is increasingly being evidenced as delivering health and wellbeing benefits. In the context of LBE, a key concern is the access to green infrastructure and open spaces for residents in the east of the borough, where access to the Lee Valley Regional Park is limited due to the presence of industrial land, main roads and lack of public transport access. This is compounded by safety concerns with respect to the open spaces that are available, which impacts the use of green spaces in the borough.

9.25 Transport is a key determinant of health; London policy has a particular focus on delivering ‘Healthy Streets’. In addition, LBE have an active transport delivery group ‘Cycle Enfield’ which aims to deliver greater walking and cycling facilities. These initiatives aim to encourage active lifestyles, reduce dependency on cars and therefore concentration of harmful emission, thus delivering health benefits, which is explored in detail in Chapter 13. Figure 9.3 demonstrates the scope for greater levels of active travel especially in the east of the borough, given the proximity to the Lee Valley Regional Park.

9.26 Mental health is another challenge for the borough. According to research, Enfield has a higher percentage of poor mental health amongst 16-34 years old and 55+ (23% and 18.5% respectively) in comparison to London (16% and 13.3% respectively).

9.27 Accessibility to health services has an important role to play in determining health in the borough. As of 2014, there were 52 GP practices in the borough and two main hospitals:

- North Middlesex University Hospital; and
- Chase Farm Hospital.

9.28 However, it was noted in the scoping interviews with LBE officers that there are significant pressures on health infrastructure namely:

- Too few GP practices on estates;
- An ageing GP service with inadequate facilities, 50% of practices are in old residential properties;
- There is a struggle to match adult social care availability with hospital out patients, resulting in delayed discharge;
- Uneven distribution of private and public care homes between the west and the east of the borough respectively; and
- Cross boundary movement of patients is putting increased pressure on facilities, in particular Chase Farm Hospital.
Figure 9.3 Percentage of residents completing 2 x 10 minutes of active travel per day\textsuperscript{84}

Future

9.29 Wider determinants such as green infrastructure and active living are gaining more headline policy focus and may lead to better health outcomes for the borough. An example of this is the prominence of Cycle Enfield and the liveable neighbourhoods £9m funding that has been secured for Enfield Town, (explored further in Chapter 13.

9.30 LBE is exploring ‘School Super Zones’; which is a Public Health England initiative to create a 400m radius zone around schools which aim to reduce air pollution, gambling shops and unhealthy food options, see the below case study for further detail. Therefore, focusing on two of the main health issues in LBE.

9.31 There is growing evidence of the link between high density development and the negative public health impacts this has. Given the significant rise in housing targets through the Draft London Plan (2017), this will pose a genuine risk to the borough.

9.32 However, it should be noted that new development schemes offer the opportunity to not only provide for needs but also support shift in service delivery. Whilst LBE are exploring co locating health services under one roof in strategic locations across the borough.

Case Study: School Super Zones

It is widely accepted that having exposure to healthy spaces and environments helps reduce health inequalities and can have a lasting impact on the physical and mental wellbeing of children. The School Super Zones is an initiative developed and being tested by 13 London borough’s including Enfield. Its aim is to create zones within walking distance of schools which are healthier and safer for children to ‘live, learn and play’. A variety of actions are being tested to deliver these super zones, including: Reducing traffic to bring down air pollution; Restricting advertising of unhealthy foods; Improving pedestrian routes to school; and Installing water fountains to supporting healthier drinking options.


Key issues and objectives

9.33 The following key issues emerge from the context and baseline review:

- Health is a cross cutting theme that is influenced by wider environmental and social determinants and policy positions on air quality, transport, communities, climate change adapation and transport will have a direct impact on LBE’s future baseline on health.

- Health issues follow the east to west spatial deprivation trend in the borough illustrated by life expectancy across wards. The flagship health issues revolve around: air quality, obesity and food deprivation and access to green spaces.

- There are also deficiencies in the borough’s health infrastructure with inadequate GP facilities, cross boundary pressure on health services and issues around primary health services.

- Development design has a clear bearing on health outcomes, with concerns in respect of high-density development.

9.34 In light of the key issues discussed above it is proposed that the IIA should include the following objective:

Improve the physical and mental health and wellbeing of Enfield residents and reduce health inequalities between local communities within the borough.
10. Heritage and townscape

Introduction

10.1 As per the NPPF, the term historic environment—a concept that encompasses the rich history and culture of any given area—can be defined as including “all aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora.” The relevance of including a section on the same in a local plan is to facilitate in the drafting of plans which can both avoid any impacts to the historic environment and find opportunities to deliver enhancements, for instance, through enhancement access to and appreciation of historic environment assets.

10.2 Aside from being socio-culturally important to local communities, the heritage of a place can positively drive regeneration and economic growth by attracting investment and draw visitors into neighbourhoods. For an area that is rapidly changing like Enfield is how the heritage is managed and persevered is crucial. Heritage management is indicative of how the council will develop new places, enhance existing neighbourhoods and recognise the heritage of its communities.

Context review

National

10.3 Key messages from the National Planning Policy Framework (NPPF) include:

- Strategic policies should set out an overall strategy making provision for ‘conservation and enhancement of the natural, built and historic environment, including landscapes and green infrastructure.

- Planning policies and decisions should ensure that developments ‘are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation of change (such as increased densities).

- Heritage assets should be recognised as an ‘irreplaceable resource’ that should be conserved in a ‘manner appropriate to their significance’, taking account of ‘the wider social, cultural, economic and environmental benefits’ of conservation, whilst also recognising the positive contribution new development can make to local character and distinctiveness.

- Plans should set out a ‘positive strategy’ for the ‘conservation and enjoyment of the historic environment’, including those heritage assets that are most at risk.

- When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset’s conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss of less than substantial harm to its significance.

10.4 These messages are supported by the national Planning Practice Guidance (PPG) which itself includes the key message that local authorities should set out in their Local Plans a positive strategy for the conservation and enjoyment of the historic environment which recognises that conservation is not a passive exercise and that identifies specific opportunities for the conservation and enhancement of heritage assets.

10.5 The Ancient Monuments & Archaeological Areas Act (1979) legislates to protect the archaeological heritage of England, Wales and Scotland.

---

10.6 The Heritage Statement (2017)\textsuperscript{86} replaces the 2010 Statement on the Historic Environment for England and sets out the Government’s vision for supporting the heritage sector to help it to protect and care for heritage and the historic environment in the coming years, in order to maximise the economic and social impact of heritage and to ensure that everyone can enjoy and benefit from it.

10.7 The Setting of Heritage Assets (2nd Edition) - published in December 2017 and provides good practice advice on understanding how setting contributes to the significance of heritage assets, particularly focusing on how setting allows the significance to be appreciated and how views contribute to setting. The guidance is written primarily for local authorities for managing change within the settings of heritage assets, both designated and non-designated.

10.8 The Government’s 25 YEP also sets out a number of goals and policies in order to help the natural world regain and retain good health. In this context, Goal 6 ‘Enhanced beauty, heritage and engagement with the natural environment’ acknowledges the value of the historic environment.

Regional

10.9 The Draft London Plan (2017) has a chapter, ‘Chapter 7 Heritage and Culture’ sections of this are dedicated to policies to protect and support the city’s rich matrix of historic buildings and landscapes:

- Policy HC1: Heritage and culture: sets out high level policy context for plan making and decision making at borough-level with regards to heritage. It states boroughs should deliver local policies which recognise and embed the role of heritage in place-making, utilise the heritage significance of a site, integrate conservation with innovative architecture and enhance the historic environment.

- HC3: Strategic and local views: heritage views and landscapes are an important element to the character if London. This policy sets out an objective to protect certain views such as London Panoramas, River Prospects and Townscape Views.

10.10 The MES does have a heritage focus in relation to protecting London’s historic parks, nature reserves and natural habitats. The protection of natural heritage comes through in biodiversity and green infrastructure polices within the strategy.

10.11 The Greater London Historic Environment Record (GLHER) is a comprehensive record of non-designated historic sites and assets. It records over 87,000 entries across Greater London and captures sites of historic interest ranging from the find locations of prehistoric implements to Victorian and 20th century sites .

Local

10.12 LBEs Core Strategy 2010, recognises that the boroughs heritage assets and historical environment is an important contributor to the borough’s character and creating a sense of place. It notes the need to protect historical assets whilst meeting growth targets. ‘Section 8.3 Built and landscape heritage’ of the strategy is There are a number of policies that consider the heritage and townscape:

- Core Policy 11: Recreation, Leisure, Culture and Arts: The policy emphasises the need to support strategies which identify current and future needs of heritage and cultural significance in the borough.

- Core Policy 31: Built and Landscape Heritage: This policy is focused on implementing national and regional policies in order to preserve and enhance historical assets; including stipulations that development proposals will need to include a character appraisal which demonstrates the development will respect and enhance assets in close proximity.

10.13 LBE’s Development Management Document (2014) has a section focused on design and heritage, in particular the DMD 44 policy, which should be read in conjunction with Core Policy 31

- DMD 44: Conserving and Enhancing Heritage Assets: Sets out requirements for new developments in terms of heritage considerations.

The borough’s area action plans do not delve in to great detail in relation to heritage and townscape, however they all do note the need for new developments to consider the historic environment and heritage assets identifies within each area, for instance:

- North East Area Action Plan: Objective 2: Notes “protect and enhance the historic environment, including non-designated buildings and sites of heritage value, for the benefit of residents and visitors alike”.

In 2019 LBE published the SPD ‘Making Enfield: Heritage Strategy: 2019 – 2024’. The strategy aims to ensure that heritage is considered as part of the growth in the boroughs built and natural environment. It aims to ensure that design of new places provides enhancements of the historic environment and there is a focus on the heritage of cultural practices from different groups across the borough. The strategy is informed by the following documents:

- Conservation Area Character Appraisals;
- Conservation Area Management Proposals;
- Local Heritage List; and
- Shopfront Design Guidance.

In 2011 LBE undertook the ‘Enfield Characterisation Study’ which reviewed the borough’s landscape and evolution to identify key characteristics of the borough. It highlights key issues with the aim of helping build upon and protect the existing identify of the borough. The document notes the importance of the borough’s historical centres and series of historic connections that provide a sense of character.

LBEs Areas of Archaeological Importance Review (2011) was prepared by English Heritage and recommends areas of the borough to be declared as Archaeological Priority Areas (APAs). APAs are declared where there is a significant known archaeological interest or there is understood to be potential for new archaeological discoveries.

**Baseline review**

**Current**

The Borough has a number of historic assets designated at either a local and national scale, including:

- Five Scheduled Ancient Monuments;
- 22 conservation areas;
- 5 registered parks and gardens of special historic interest (Forty Hall, Trent Park, Broomfield, Myddleton House and Grovelands);
- 479 statutorily listed buildings;
- 262 local landmarks and landscapes identified on the Local heritage list; and
- 25 areas of archaeological importance.

All 22 conservation areas in the borough have Conservation Area Character Appraisals, these documents highlight assets which make the areas distinctive and aim to protect the important historical and cultural features. Historic England defines conservation area management plans as “vehicles for reinforcing the positive character of a historic area as well as for avoiding, minimising and mitigating negative impacts identified as affecting the area”, noting that this may also help to “outline opportunities to better reveal or enhance significance, possibly through the location or design of new development”.

---

10.20 The borough has 479 statutorily listed buildings. 30 of these are Grade II* (buildings of particularly important interest), three are Grade I (buildings of exceptional interest) and 312 are Grade II (buildings of special interest). A key priority for the borough is the Grade II* Broomfield House which has experienced fire damage. In general, the listed buildings are clustered around town centre, following early patterns of settlements and transport routes. Figure 10.1 demonstrates the listed buildings and registered parks and gardens distribution.

10.21 Historic England maintains a nationwide Heritage at Risk (HAR) register, updated on an annual basis. The 2018 HAR register records 18 entries that are at risk within the borough. Of these, five are Grade II* listed buildings, two are conservation areas (Church Street and Fore Street). Three are registered parks and gardens (Grovelands, Broomfield and Trent Park) and eight are Grade II listed buildings.

10.22 LBES Archaeological Priority Area Appraisal indicates that there are a total of 25 APAs, including significant area in the north west of the borough and along the eastern border, the areas include:

- Enfield Chase & Camley Moat;
- Whitewebbs Hill, Bull Cross and Forty Hill;
- Lea Valley West Bank;
- Ermine Street;
- Lea Valley East Bank;
- Enfield Town centre Broomfield House.

---

Future

10.23 New development within the borough has the potential to impact heritage assets and their settings through inappropriate design and layout. The borough has a wide range of built heritage and this range of historic context presents potential for a variety of negative effects from inappropriate development.

10.24 However, given the LBE’s policy to protect and, where applicable, enhance the historic environment; new development will offer opportunities to improve the quality of the borough’s historic environment, either through regeneration of a specific asset or through improvements to an asset’s setting and wider environment. Development can also offer opportunities to improve access to or better reveal the significance of a heritage asset.

10.25 Existing historic environment designations and the policies of the NPPF will continue to offer a degree of protection to heritage assets and their settings.

Key issues and objectives

10.26 The following key issues emerge from the context and baseline review:

- LBE has recently published an updated heritage strategy which aims to ensure historic and heritage assets and environments are given serious consideration and protection from any new developments, it also notes the role of heritage in being a stimulant for economic growth and attracting visitors to the borough.
- LBE has a rich variety of designated heritage assets, including five scheduled ancient monuments, 22 conservation areas, 25 APAs, 5 registered parks and gardens of special historic interest and 479 statutorily listed buildings.
- In general heritage assets are clustered around town centres and transport hubs, whilst buildings with the highest gradings (II* or I) are prominently former private estates outside these town-centre concentrations.

10.27 In light of these key issues, it is proposed that the IIA framework should include the following objectives:

Support the integrity, special interest, character, appearance and historic setting of historic settlements and heritage assets, both designated and non-designated; facilitate enhancements to the fabric and setting of the historic environment; and support access to, interpretation and understanding of the historic environment (including through investigations and studies which better reveal the significance of archaeological assets).
11. Housing

Introduction

11.1 England has a shortage of housing, with fewer homes being built than the number of new households being formed each year, while historically there has been a shortfall in building rates over many decades. Housing affordability has significantly worsened in 69 local authorities in England and Wales over the last five years, with over three-quarters of these being in London. In 2017, average house prices in Britain were 10 times the annual salary of residents. Nationally, over seven times people’s incomes are needed to achieve home ownership and the average first-time buyer is estimated to be thirty-seven years of age. Housing has thus become one of the most pressing issues faced by local authorities and should be appropriately addressed in local plans. With very few affordable rented homes and a growing number of people on low income living in the private rented sector, Enfield faces many of the same issues as the rest of Britain.

11.2 While Enfield was consistent with the objectives set out in the London Plan (2008), the 2008 plan had a housing target of 395 dwellings per annum, and London’s population has since continued to grow, changing the borough tremendously. The London Plan adopted in 2011—considered with alterations made in 2016—significantly raised Enfield’s housing targets from 560 to 798 dwellings per annum. As per the Draft Enfield Local Plan, by 2036, Enfield’s population is likely to rise to 390,000. This will require the council to formulate a Local Plan that can accommodate the future development needs of this rising population. With the same mind, the following sections provide a comprehensive overview of the factors and policies affecting housing in Enfield.

Policy context

National

11.3 Key messages from the NPPF include:

- Support for strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities’ health, social and cultural wellbeing.

- To support the Government’s objective of significantly boosting the supply of housing, strategic policies should be informed by a local housing need assessment, conducted using the standard method in national planning guidance. In addition to the local housing need figure, any needs that cannot be met within neighbouring areas should also be considered in establishing the amount of housing to be planned for.

- The size, type and tenure of housing needed for different groups in the community should be assessed and reflected in planning policies. Where a need for affordable housing is identified, planning policies should specify the type of affordable housing required and expect it to be met onsite where possible.

- Recognise the important contribution of small and medium sized development sites in meeting housing needs. Local Plans should identify land to accommodate at least 10% of their housing requirement on sites no larger than one hectare, and neighbourhood planning groups should also consider the opportunities for allocating small and medium-sized sites.

- In rural areas, planning policies and decisions should be responsive to local circumstances and plan housing development to reflect local needs, particularly for affordable housing, including through rural exception sites where appropriate. Authorities should consider whether allowing some market housing would facilitate the provision of affordable housing to meet local needs.

---

90 House of Commons (2018), ‘Tackling the under-supply of housing in England’ [online], available at: https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-7671
91 Ibid.
11.4 In February 2017, the government published the Housing White Paper\textsuperscript{92} titled ‘Fixing our broken housing market’. Key messages regarding housing delivery include a proposed new standardised methodology for calculating housing need and a drive to increase densities in the most sustainable locations, particularly close to transport hubs like train stations.

**Regional**

11.5 The London Strategic Housing Market Assessment\textsuperscript{93} (SHMA) (2017) identifies a total annual housing requirement for London to 2041 of 65,878 dwellings per annum, of which 47% should be either social rent of affordable rent and a further 18% intermediate tenure, i.e. shared ownership or London Living Rent.

11.6 The ‘Intend to Publish’ version of the London Plan (2019)\textsuperscript{94} proposes a London-wide target of 522,870 new homes for London from 2019 - 2029. For Enfield specifically, it sets a target of 12,460 between 2019 to 2029 equating to 1,260 dwellings per annum. Other key policy messages from the plan include:

- Policy H1 (Increasing housing supply) says that boroughs should prepare “delivery-focused development plans” which “optimise the potential for housing delivery on all suitable and available brownfield sites”.
- Policy H5 (Delivering affordable housing) notes that the government’s strategic target is for 50 per cent of all new homes delivered across London to be affordable.
- Policy H7 (Affordable housing tenure) notes the Mayor’s commitment to delivering genuinely affordable housing.
- Policy H13 (Build to Rent) aims to make a positive contribution to increasing housing supply by providing more houses to rent.

11.7 The Mayor’s Affordable Housing and Viability Supplementary Planning Guidance (SPG)\textsuperscript{95} has introduced a draft policy approach that sets a 50% affordable housing delivery target for long term delivery. The goal is to increase affordability of housing delivered through the planning system.

**Local**

11.8 Enfield’s House and Growth Strategy (2020-2030)\textsuperscript{96} sets out the Council’s plan to deliver better homes in order to address inequality, create a more balanced housing market and provide local people access to good homes. Key messages from the strategy include:

- Plans to provide more affordable homes for local people: the Council plans on increasing the supply of housing in Enfield by delivering on the targets set out for Enfield in the London plan and the core strategy.
- Investing in Council homes: as part of a new council housing asset management strategy, the council will provide new council-owned homes and ensure existing homes can provide quality, safety and security, for now and for the future.
- Improving the quality and variety of private sector housing: while one of the council’s goals is to increase the proportion of social and affordable homes, given that most homes in Enfield are in the private sector, the council is also acting to deliver high-quality, fairer, more secure and more affordable homes in the private sector.
- Building accessible houses and housing pathways: the council’s include plans to increase high quality, flexible and accessible specialist housing with care options for adults with physical disabilities in line with borough need.

\textsuperscript{92} MHCLG (2017), Housing White Paper [online], available from: \url{https://www.gov.uk/government/collections/housing-whitepaper}

\textsuperscript{93} Mayor of London (2017), London Strategic Housing Market Assessment [online], available at: \url{https://www.london.gov.uk/sites/default/files/london_shma_2017.pdf}


\textsuperscript{95} Mayor of London (2017), Affordable Housing and Vitality Supplementary Planning Guidance [online], available at: \url{https://www.london.gov.uk/sites/default/files/ah_viability_spn_20170816.pdf}

LBE’s Towards a New Local Plan 2036 report lists increasing housing availability, affordability and quality as key priorities for the council. Since development levels have not kept pace with demand, housing supply and affordability have been greatly limited. At present, roughly 53% of residents receiving housing benefits depend on the private rented sector to meet their housing needs. Furthermore, given that not all development in the past has met quality standards, it is important to address the issues of overall supply, quality and affordability in the future. As per the plan, the Council will secure the necessary conditions required to introduce an adequate supply of homes, meet the needs of both existing and future households in the borough, and deliver at least 1,876 homes per year in the plan period. Some important draft policies from the document are:

- Policy H5 (Private rented sector and build to rent): In order to maximise housing supply in the borough, the council will support proposals for standalone build to rent developments or build to rent blocks on large mixed tenure development, in appropriate locations.
- Policy H6 (Custom and self-build housing): the council aims to give interested residents the opportunity to design and build their own homes. According to the council, a right to build initiative provides an opportunity to not only increase the number of homes in the borough but also to deliver exemplar homes of high-quality design.
- Policy H7 (Supported and specialist housing): the council will provide housing for vulnerable local people, including specialist housing for the elderly and disabled.

The Development Management Document’s ‘Chapter 2 Housing’ focuses on the delivery of housing in the borough, there are multiple DMD policies, split between the following themes:

- Affordable housing;
- Housing size;
- Existing Housing Stock and Residential Conversions;
- Standards for New Development; and
- Residential Extensions.

The borough’s area action plans all provide dedicated detailed sections to the provision of housing within their boundaries. They all provide key development areas and target housing numbers:

- North Circular Area Action Plan: 2,000 new homes largely in New Southgate and Ladderswood Estate.
- Edmonton Leeside Area Action Plan: 5,000 new homes, mainly delivered at Meridian Water.
- North East Area Action Plan: 1,000+ new homes shared across Enfield Lock, Ponders End, Turkey Street, Southbury and Enfield Highway.
Baseline review

Current

11.12 Enfield’s Housing Action Plan97 (2019) sets out past delivery of homes against regional targets. Figure 11.1 illustrates both housing delivery figures from the past to present and presents future housing delivery projections.

![Figure 11.1: Enfield housing trajectory (2019)98](image)

11.13 As of March 2019, the UK House Price Index99 shows that the average house price in Enfield was £393,237. While this figure is 15% lower than London as a whole, it is still 62% higher than England. Table 11.1 demonstrates weekly rent levels across tenure in Enfield.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bed</td>
<td>91.24</td>
<td>92.13</td>
<td>155.13</td>
<td>231</td>
<td>242</td>
<td>212.42</td>
</tr>
<tr>
<td>2 bed</td>
<td>101.17</td>
<td>115.65</td>
<td>164.24</td>
<td>288</td>
<td>300</td>
<td>263.72</td>
</tr>
<tr>
<td>3 bed</td>
<td>111.39</td>
<td>134.82</td>
<td>173.37</td>
<td>340</td>
<td>368</td>
<td>325.46</td>
</tr>
<tr>
<td>4 bed</td>
<td>117.51</td>
<td>131.86</td>
<td>182.49</td>
<td>404</td>
<td>462</td>
<td>389.78</td>
</tr>
</tbody>
</table>

99 UK House Price Index (2019) [online], available at: https://landregistry.data.gov.uk/app/ukhpi
11.14 The London Borough of Enfield Local Housing Needs Assessment (LHNA) (2019) states that there exist households in the borough who are unable to access both social/affordable rented housing and cannot buy homes on the open market. The report reads, “lower quartile house prices in the borough are £301,000 and median prices are £385,000. Assuming a 3.5x income multiple and a 10% deposit, households would need an income of £77,400 to afford lower quartile prices and £99,000 afford median prices. Only around 7.6% of households have an income exceeding in £75,000 in the borough but around 30% have an income between £40,000 and £75,000.” Thus, at the current levels of rent, housing is largely unaffordable.

11.15 According to Enfield’s House and Growth Strategy 2020-2030, eviction from the Private Rented Sector is the biggest cause of homelessness in Enfield. Additionally, the report also notes that Enfield is the second highest provider of temporary accommodation in England. Figure 11.2 shows the rise in homelessness.

Table 11.2: Homelessness in Enfield

<table>
<thead>
<tr>
<th>Year</th>
<th>Homelessness Acceptances</th>
<th>Households in temporary accommodation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015/16</td>
<td>1,131</td>
<td>2,987</td>
</tr>
<tr>
<td>2016/17</td>
<td>1,096</td>
<td>3,244</td>
</tr>
<tr>
<td>2017/18</td>
<td>786</td>
<td>3,276</td>
</tr>
</tbody>
</table>

11.16 The council has noted the importance of providing affordable housing in several policy documents including the ones mentioned in this section—it is for this reason that the borough set an affordable housing policy target of 40%.

11.17 The Annual Monitoring Report 2017/18 (AMR) (2019) records a total of 339 affordable homes built in 2016/17 and 2017/18, respectively. In the reporting years, an average of 22% of all conventional housing was affordable. However, as seen in Table 11.3, the affordable housing policy target of 40% was not met—the report states that this happened since several large schemes were under construction but not included in the completed numbers. Table 11.3 presents the completion numbers along with a breakdown of the tenure types.

Table 11.3: Affordable housing completions (AMR)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total (gross) completions</th>
<th>Total (net) completions</th>
<th>Total affordable (all tenures) completion</th>
<th>Affordable break down %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017/18</td>
<td>568</td>
<td>397</td>
<td>37</td>
<td>34 Social Rented 7%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3 Intermediate</td>
</tr>
<tr>
<td>2016/17</td>
<td>1,003</td>
<td>884</td>
<td>302</td>
<td>47 Social Rented</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>127 Intermediate 30%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128 Affordable Rent</td>
</tr>
<tr>
<td>Total over reporting period</td>
<td>1,571</td>
<td>1,281</td>
<td>339</td>
<td>22% (average over 2 years)</td>
</tr>
</tbody>
</table>
**Future**

11.18 The Enfield Draft Local Plan Regulation 18 Publication (2018) is seeking to deliver at least 1,876 homes each year in the plan period 2018-2036. The LHNA uses this figure as a base for the deprivation of an appropriate dwelling mix to be delivered. The LHNA has also considered the standard method for calculating housing need which establishes an uncapped need for 3,750 dwellings each year and the council needs to consider this in the light of the housing targets in the draft Local Plan.

11.19 Enfield’s draft Strategic Housing Market Assessment (SHMA) (2015) identified a need for 50% of affordable rented and market housing in the borough. Furthermore, Enfield’s Local Housing Register indicated a demand for 47.3% for family sized homes of affordable and social rented housing. These figures are part of Enfield’s Draft Local housing needs assessment (2019) which sets forth clear plans for Enfield’s future. Some of the council’s future aims follow:

- The council plans to support and provide a variety of both housing sizes, products and affordable tenures to meet the borough’s need. This includes securing affordable homes from a range of council-led initiatives.
- The council also seeks to achieve at least 30% of affordable housing delivery to be social rent and London affordable rent; 30% intermediate affordable housing product including London Living Rent and Shared Ownership and the remaining 40% to be determined by the council in line with identified local need
- The council will also encourage infill development on small, vacant or underused sites and for the redevelopment or upward extension of flats and non-residential buildings, in order to deliver additional affordable housing.

11.20 Furthermore, Enfield has several development and regeneration projects on the horizon, the biggest of which is the borough’s flagship Meridian Water regeneration programme in Upper Edmonton. Led by the council, the programme is set to bring 10,000 new homes and create thousands of jobs in Enfield. Other notable future projects as listed in the Housing Action Plan (2019) include:

- Estate regeneration of Ladderswood in New Southgate, listed in the North Circular Area Action Plan (NCAAP);
- Estate Regeneration of the Alma Estate with 900+ homes in Ponders End, from the North East Enfield Area Action Plan (NEAAP);
- Estate Regeneration of New Avenue (Southgate)
- The Council’s Phase 1 Small Sites programme across seven sites in 2019/20

**Key issues and objectives**

11.21 The following key issues emerge from the context and baseline review:

- The 'Intend to Publish' version of the London Plan (2019) significantly raised Enfield’s housing targets to a ten year target of 12,460, which equates to 1,246 dwellings per annum.
- LBE has the potential to be a continued focus for housing delivery at scale; however, it will be important to balance this with the delivery of a range of types and tenures in the area to meet localised needs, specifically the needs of families that require affordable family sized homes.
- While there is a need to provide more housing simply to match the growing population, it is imperative that this housing be affordable: the 2015 SHMA identifies the need for 50% affordable (rented and market) housing in the borough; however, recent affordable housing delivery is below policy target, achieving 40% instead of the 50% target.

11.22 In light of these key issues, it is proposed that the IIA framework should include the following objectives:

Deliver housing to meet agreed targets and support an appropriate mix of housing types and tenures, including affordable and specialist housing, including housing for the elderly and disabled people.
12. Landscape and green infrastructure

Introduction

12.1 As per the European Landscape Convention (ELC), the term landscape can be defined as, “an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors”. Our understanding of landscape follows from the above definition as a diverse resource which includes individual landscapes of distinct character, experienced at different scales, and defining distinctive places. It further reinforces the point that all our landscapes matter for their individual and collective value to society; and that landscape is a resource not only to be protected, but also managed and sometimes created.

12.2 The European Environment Agency describe green infrastructure as “Strategically planned networks of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services”\(^{100}\). The multifunctionality of GI is widely accepted in the academic sector, however it is only more recently that variety of ecosystem services GI has the potential to provide is being realised in the UK policy context, figure 12.1 of this chapter demonstrates the multifunctionality that GI can provide when implemented correctly.

Context review

National

12.3 Key messages from the National Planning Policy Framework\(^{101}\) (NPPF) include that planning policies should:

- Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and the Broads. The scale and extent of development within these designated areas should be limited.

- Strategic policies should set out an overall strategy making provision for ‘conservation and enhancement of the natural, built and historic environment, including landscapes and green infrastructure.

- Planning policies and decisions should ensure that developments ‘are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation of change (such as increased densities).

- Planning policies and decisions should contribute to and enhance the natural and local environment by:
  - protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils;
  - recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; and
  - remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

- Provide the social, recreational and cultural facilities and services the community needs, such as local shops, meeting places, sports venues, open space, cultural buildings, public houses and places of worship, whilst guarding against the unnecessary loss of community facilities and services.

---


Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to these issues.

Retain and develop accessible local services and community facilities in rural areas.

Ensure that developments create safe and accessible environments where crime and disorder, and the fear of crime, do not undermine quality of life or community cohesion. Places should contain clear and legible pedestrian routes, and high-quality public spaces, which encourage the active and continual use of public areas.

Enable and support health lifestyles through provision of green infrastructure (GI), sports facilities, local shops, access to healthier food, allotments and layouts that encourage walking and cycling.

Ensure that there is a ‘sufficient choice of school places’ and taking a ‘proactive, positive and collaborative approach’ to bringing forward ‘development that will widen choice in education’.

New Development should be planned in a way that avoids increased vulnerability arising from climate change, including through the planning of GI.

Plans should maintain and enhance networks of habitats and green infrastructure.

The Government’s 25 Year Environment Plan (2018) sets out a strategy for managing and enhancing the natural environment. Chapter 2 is dedicated to recovering nature and enhancing the beauty of landscapes, with the main focus on reviewing the National Park’s and Areas of Outstanding Natural Beauty (AONBs) in order to better conserve and enhance landscapes.

Chapter 3 of the 25 Year Environmental Plan is focused on connecting people with the environment. A significant proportion of this is geared towards greening towns and cities, to create more GI and plant more trees in urban areas. It should be noted that the rhetoric is as much about delivering high quality GI as well as high quantity.

Natural England have developed the ‘Green Infrastructure Guidance’ document which provides guidance to decision makers about how to deliver and drive forward green infrastructure, especially at a plan making level and the multifunctional value it provides. Figure 12.1 is extracted from the guidance and demonstrates the variety of policy priorities green infrastructure can deliver.

National Character Area (NCA) Profiles are published by Natural England and divide England in 159 distinct natural areas based on their landscape, biodiversity, geodiversity, historic, cultural and economic characteristics. NCAs follow natural features in the landscape and are not aligned with administrative boundaries. NCA profiles describe the features which shape each of these landscapes, providing a broad context to its character. The Government’s 25 Year Environment Plan states the intention to work with relevant authorities to deliver environmental enhancements within all 159 NCAs across England.
### Policy priorities

<table>
<thead>
<tr>
<th>Economic</th>
<th>Environmental</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic growth and employment</td>
<td>Protect and enhance cultural heritage</td>
<td>Protect and enhance the landscape, geodiversity and natural environment</td>
</tr>
<tr>
<td></td>
<td>Biodiversity conservation and enhancement</td>
<td>Climate change mitigation and adaptation</td>
</tr>
<tr>
<td></td>
<td>Promoting sustainable transport and reducing the need to travel by car</td>
<td>Community cohesion and life long learning; volunteering</td>
</tr>
<tr>
<td>Access, recreation, movement and leisure</td>
<td></td>
<td>Healthy communities; health and well being</td>
</tr>
<tr>
<td>Habitat provision and access to nature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landscape setting and context for development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy production and conservation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food production and productive landscapes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flood attenuation and water resource management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooling effect</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Figure 12.1: Green infrastructure and policy priorities*

---

Regional

12.8 The Draft London Plan (2017) references and considers landscapes and GI throughout. Chapter 8 in particular is titled ‘Green Infrastructure and Natural Environment’. A selection of important policies that stand out are:

- **Policy GG2**: Making the best use of land: the policy recognises the land pressures for the city but highlights the need to protect open spaces included the Green Belt, Metropolitan Open Land (MOL) and enhancing new GI.
- **Policy GG3**: Creating a healthy city: A big focus of London’s new round of strategies is the push towards a healthy city. This policy recognises the significant benefit GI and landscapes provide for physical and mental health and wellbeing.
- **Policy G1**: Green Infrastructure: This policy enforces the need to protect, plan and design in GI. It also highlights the need to better understand the function and potential function of GI.
- **Policy G2**: London’s Green Belt: This focuses on protecting the green belt from inappropriate development and enhancing its multifunctional uses.
- **Policy G4**: Local green and open spaces: Similarly, this is about protecting and enhancing green space, as well as understanding the multifunctional aspect it highlights the importance of local and green spaces being accessible.
- **Policy G5**: Urban Greening: The introduction of the Urban Greening Factor is identified, explaining that this tool will push and enhance the implementation of high-quality GI in new developments.

12.9 The MES has a clear focus on landscapes and GI, the strategy’s vision is about making London greener, cleaner and ready for the future, as such this scoping theme gets significant focus. Chapter five is dedicated to green infrastructure, the chapter’s headline aim is:

- London will be the world’s first National Park City where more than half of its area is green; where the natural environment is protected, and the network of green infrastructure is managed to benefit all Londoners.

12.10 It is worth highlighting a number of the MES policies that will need to be considered through the Local Plan process and serious consideration of these will help unlock the multifunctionality of open spaces, landscapes and GI:

- **Policy 5.1.1**: Protect, enhance and increase green areas in the city, to provide green infrastructure services and benefits that London needs now and in the future.
- **Policy 5.1.2**: Protect, conserve, and enhance the landscape and cultural value of London’s green infrastructure.
- **Policy 5.3.1**: Address underinvestment, and improve the management of London’s green infrastructure, by developing new business models and improving the awareness of the benefits of London’s green infrastructure.

12.11 The MTS provides strong interlinkages particularly with GI, highlighting the need to protect GI when developing transport schemes, seeking additional opportunities to build new GI into the transport estate. Additionally, GI will play an important role in delivering the Healthy Streets approach which is the central programme of the MTS’ vision.

12.12 The ALGG SPG provides the evidence base upon which the new London Plan seeks to build. Its aim was to promote the shift from grey to green infrastructure and transform London into a green city rather than one punctuated by open spaces, landscapes and GI. The SPG provides guidance on:

- Protect, conserve and enhance London’s strategic network of green and open natural and cultural spaces, to connect the everyday life of the city to a range of experiences.
- Encourage greater use of, and engagement with, London’s green infrastructure; popularising key destinations within the network and fostering a greater appreciation of London’s natural and cultural landscapes.
Secure a network of high quality, well designed and multifunctional green and open spaces to establish a crucial component of urban infrastructure able to address the environmental challenges of the 21st century – most notably climate change.

A key element the SPG is the emphasis on access and joining up the strategic network of GI and open spaces. The SPG developed 11 green grids across London which identifies key connections, opportunities and sets out the spatial distribution of London’s GI and landscapes.

- GGA1 Lee Valley and Finchley Ridge covers LBE and figure 12.2 demonstrates the strong baseline in the borough.

**Local**

LBE’s Core Strategy (2010) has a set of core strategies titled: “Environmental Protection and Green Infrastructure”. This chapter covers topic areas relevant to the theme of Landscapes and GI. A number of relevant policies have been highlighted:

- Core Policy 31: Built and landscape heritage: This policy focuses on the need to protect and enhance the heritage assets in the borough, including the area of Special character in the north west of the borough.
- Core Policy 33: Green belt and the countryside: the policy sets out the need to protect and enhance LBE’s green belt, it notes that following a strategic review of the green belt the area remains largely unaltered.
- Core Policy 34: Parks, playing fields and other open spaces: the focus is on not only protecting and enhance current open spaces but to provide high quality and accessible open spaces. This takes the opportunity to provide links to the Lee Valley Regional Park and to the East London Green Grid.
- Core Policy 35: Lee Valley Regional Park and waterways: the policy highlights the need to work with stakeholders to realise the potential of the park and improve access to it.

As part of the borough’s Development Management Document evidence base as Open Space Review was undertaken in 2013. This document reviewed and identified open space in the borough. The Development Management document has a suite of policies related to GI, including:

- DMD 59: Avoiding and Reducing Flood Risk: Notes the need for new developments to prevent the loss of permeable surfaces, and maximise the use of GI as potential sources of flood storage.
- DMD 71: Protection and Enhancement of Open Spaces: Development involving the loss of open space will be resisted unless replacement areas are provided, or the open space is surplus to requirements.
- GDMD 77: Green Chains: New developments will e within a 5-minute walk or 400 metre radius from a Green Chain.
- DMD 81: Landscaping: Proposed development must provide high quality landscaping that enhances the local environment

In 2011 LBE undertook the ‘Enfield Characterisation Study’ which reviewed the borough’s landscape and evolution to identify key characteristics of the borough. It highlights key issues and opportunities with the aim of helping build upon and protect the existing identify of the borough. One key element highlighted is the landscape and urban interface.

Following on from this LBE have an evidence base document ‘Area of Special Character Boundary Review’ (2013). This identifies and sets the boundaries for areas of special character, which should be read in conjunction with the above report.
12.18 The borough’s area action plans all have sections focusing on Landscape and GI oriented policies:

- Edmonton Leeside Area Action Plan: ‘Chapter 13 Watercourses, Green Spaces and Flood Risk’
- North East Enfield Area Action Plan: ‘Chapter 8 Green Network and food Growing’
- North Circular Area Action Plan: ‘3.6 Greening the north circular’

**Baseline review**

**Current**

12.19 Figure 12.2 demonstrates the extent of the borough’s baseline in terms of landscapes and greenspaces. It is estimated that nearly a third of the borough is designated as green belt. Whilst figure 12.2 does demonstrate the strong distribution of green spaces across the borough. Aside from the green belt in the north west, Lee Valley Regional Park and the Chingford Reservoirs SSSI dominate the eastern stretch of the borough’s landscape.

12.20 Despite being ranked the 9th greenest London borough, Enfield does currently have accessibility concerns, especially to the Lee Valley Regional Park. Despite the Core Strategy’s focus on improving access, severance in the east of the borough is still a concern. The Enfield Characterisation Study notes that connections are restricted by physical barriers such as industrial land and the river.

12.21 LBE has 36 sites designated as MOL, which totals 249.07 hectares of land throughout the borough.

12.22 It should also be noted that for a London borough the green space uses are wide ranging. In the west of the borough, farming has helped shape the agricultural, rural landscape. Whilst Lee Valley Regional Park is associated with waterways and leisure activities.

12.23 LBE sits within the Norther Thames Basin NCA which is characterised by “a diverse landscape ranging from the wooded Hertfordshire plateaux and river valleys, to the open landscape and predominantly arable area of the Essex heathlands, with areas of urbanisation mixed in throughout”\(^\text{103}\). It is noted that the NCA has come under increasing pressure from urban creep and the demands on land use this entails.

12.24 LBE has two designated Area of Special character (AOSC):

- The Enfield Chase AOSC; and
- The Lee Valley AOSC.

12.25 LBE’s green belt is part of the wider Lee Valley glasshouse industry. Despite being a key economic and employment sector in the area, it is a declining practice. Neighbouring boroughs see it as a key industry that should be protected and an appropriate land use designation, consideration will have to be given to the future approach to this industry, in the Local Plan.

12.26 LBE’s topography is well defined with higher ground in the north west of the borough, gradually descending into the Lee Valley in the east of the borough. The topography and the rural nature of the western side of the borough has resulted in LBE identifying thirteen important local views. There are also ten shorter local views which have been identified in Conservation Area Character Appraisals. Figure 12.2 identifies those thirteen long distance views.

---

Figure 12.2: A map of LBE's green spaces

Future

12.27 The MES has set an ambitious target to become the world’s first ‘National Park City’ where over 50% of the city’s land will be designated to the natural environment. This will set a new emphasis on connecting strategic green spaces and finding opportunities to provide greater urban greening. This chapter’s case study highlights how urban greening can be provided alongside housing needs.

12.28 The London Plan’s proposal to introduce the UGF will push greater urban greening measures in new developments to provide more multi-functional high-quality green infrastructure, to help mitigate against a variety of issues such as heating, flooding and air quality. The long-term approach is for boroughs to implement their own UGF as they are best placed to understand localised context.

12.29 As an outer London borough one of the key pressures posed by the need for housing is encroachment onto the green belt. The borough will have to seriously consider all available land in order to meet housing targets. However, this will have to be balanced with protecting the rural landscape that the green belt offers LBE. This is not unique to LBE and neighbouring boroughs are under the same pressure, for instance EFDC are releasing approximately 10ha of Green Belt in their Local Plan.

12.30 Despite a strong baseline of GI and landscapes the borough has significant accessibility issues to the Lee Valley Regional Park. Severance issues have knock on effects elsewhere. For instance, a key regional issue is the recreational pressure on Epping Forest. Tackling this severance should be an essential consideration for the Local Plan not only would this help realise the multiple benefits the Lee Valley Regional Park could provide but is also help relieve the pressure on a key regional environmental asset.

---

LBE are commissioning a green, blue and grey infrastructure study, which will help identify up to date opportunities and issues for the borough.

LBE have secured woodland funding from the GLA, which is likely to be invested into Green belt land.

**Case Study:** Kidbrooke Village is a large regeneration project in the Royal Borough of Greenwich, over a 20-year period the new neighbourhood will deliver 4,800 new homes as well as 140 acres of new green space. Overall that is an increase of 50% more housing as well as 50% more GI. A central aim is to deliver biodiversity net gain on the project, whilst the GI is also providing climate resilience and flooding benefits through the use of green roofs, SuDS. These accessible open spaces also provide amenity spaces for a local community, to contribute to helping people live healthier lifestyles. 

**Key issues and objectives**

The following key issues emerge from the context and baseline review:

- There is increasing policy focus on GI from the realisation of its co-benefits, the introduction of the UGF and London’s National Park City objective. Capturing all of this will be a key issue for the Local Plan.

- There is a need to protect valued landscapes, including designed landscapes and extensive semi-rural landscape character areas in the north of the borough, and avoid loss of Green Belt that contributes to the established Green Belt purposes.

- Increasing accessibility to the Lee Valley Regional Park is an opportunity to deliver access to open space in the east of the borough, helping to mitigate the east-west imbalance of availability of green spaces.

In light of these key issues, it is proposed that the IIA framework should include the following objectives:

**Protect and enhance the character, quality and diversity of the borough’s landscapes and townscapes through appropriate location, layout and design of new development, including the preservation of important open gaps and key views, and contribute to London-wide Green Infrastructure objectives including in respect of the Lea Valley Regional Park.**
13. Transport

Introduction

13.1 Spatial planning and transport planning are intrinsically linked, the successful integration of the two areas can help to deliver high density mixed urban form that will be essential to delivering London wide housing targets.

13.2 LBE’s Local Plan will need to focus on transport as it provides multiple benefits for the borough, delivery and access to public transport will have a significant role in reducing carbon emissions and air pollution issues across the borough. Furthermore, making Enfield more accessible can provide greater spatial options for housing deliver and economic opportunity. Finally, in recent times, a key focus in the delivery of urban transport is promoting mixed methods, especially active modes of transport, which can also contribute to environmental and health and wellbeing solutions.

Context review

National

13.3 Key messages from the National Planning Policy Framework (NPPF) include:

- Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:
  - The potential impacts of development on transport networks can be addressed;
  - Opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised;
  - Opportunities to promote walking, cycling and public transport use are identified and pursued;
  - The environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account; and
  - Patterns of movement, streets, parking and other transport considerations are integral to the design of schemes and contribute to making high quality places.

- Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.

Regional

13.4 The Department for Transport published the ‘Future of Mobility: Urban Strategy’ in 2019, which sets out the national approach to maximising transport innovation in cities and towns. It focuses on a model shift towards sustainable modes of transport (walking, cycling and public transport) which are accessible to all, in order to tackle pollution and reduce greenhouse gas emissions.\(^{106}\)

13.5 The Draft London Plan (2017) includes ‘Chapter 10 – Transport’, it draws upon the MTS for its approach to transport which is expanded on below. However, its key messages are:

- 80% of all journeys by sustainable modes of transport by 2041.
- Carbon free travel by 2050.

Healthy Streets: The headline approach to transport developed through the new London policy roadmap. The approach aims to improve health and reduce health inequalities to initiate a model shift from cars to sustainable modes of transport. It is proposed that this will take place through the transformation of streets based on the 10 healthy street indicators, depicted in figure 13.1.

Figure 13.1: The 10 indicators to the Healthy Street approach

13.6 The Mayor’s Transport Strategy (2018) is the key high-level London-wide public transport strategy document setting out regional transport objectives to 2030. As stated above the key messages focus on facilitating a model shift, healthy streets and reducing pollution and greenhouse gas emission. The strategy has a raft of relatable policies and proposals, a number of key aims, in addition to those set out above, are:

- ‘Vision Zero’ which aims to eliminate all deaths and serious injuries on London Transport systems;
- By 2041, for all Londoners to do at least the 20 minutes of active travel they need to stay healthy each day;
- Reduce total London traffic by 10-15 per cent by 2041; and
- Open Crossrail 2 by 2030.

13.7 The healthy street focus should be of particular interest to LBE given the health inequality that the borough currently experiences.
13.8 The key messages specifically in relation to LBE is the proposal to deliver Crossrail 2 as it would deliver four new stations on the eastern side of the borough. The MTS states that “Crossrail 2 will support 200,000 new homes and 200,000 jobs along its route and has the potential to transform the accessibility and growth potential of the Lee Valley and its local centres”.

13.9 The North London Sub-regional Transport Plan update (2016)\(^{107}\) is one of five sub-regional transport plans published by Transport for London (TfL). The plan is a middle tier of transport planning in London, acting as a ‘bridge’ between the Mayor’s Transport Strategy and the individual Local Implementation Plans. It highlights the challenges specific to North London, which are as follows:

- Facilitate and respond to growth, especially in Brent Cross/Cricklewood and the Upper Lee Valley;
- Relieve crowding on the public transport network;
- Manage highway congestion and make more efficient use of the road network;
- Enhance connectivity and the attractiveness of orbital public transport; and
- Improve access to key locations and jobs and services.

**Local**

13.10 Despite being a number of years behind the London wide transport related policies, it is worth noting the LBE’s Core strategy (2010) policies that have driven transport decisions in the borough:

- Core Policy 24: The Road Network: This policy sets out the strategic need for improvements to the road network, providing a list of priority roads for improvement including the A506, Bullsmore Lane and the A10. Another priority was to improve access to Upper Lee Valley, which has previously been highlighted in Chapters 3 and 12.
- Core Policy 25: Pedestrians and Cyclists: aiming to provide accessible, safe and convenient sustainable transport routes across the borough.
- Core Policy 26: Public Transport: The borough set out a policy to deliver an efficient, accessible and safe public transport network that could be supported by development proposals. This included improving public interchanges, bus services and ensuring new developments demonstrate that existing or proposed public transport levels can accommodate development proposals.
- Core Policy 27: Freight: Focused on the need to promote efficient and sustainable movement of freight by road, with a particular focus on the strategic industrial sites I the Upper Lee Valley.

13.11 LBE has recently published its third Local Implementation Plan \(^{108}\) which sets out the borough’s transport plan from 2019 – 2041. The plan highlights the existing challenges to the borough and provides a number of policies and programmes to help deliver accessible, sustainable and active travel options that mitigate against environmental and social problems such as climate change air quality, health inequalities and safety. The plan has seven key objectives in order to deliver that vision:

- Deliver Cycle Enfield and supporting measures which encourage more cycling and walking in the borough;
- Promote safe, active and sustainable transport to and from schools;
- Monitor air quality and develop and deliver interventions which address local issues;
- Manage growing demand for on-street parking;
- Focus on and improve priority locations making them safer for vulnerable road users;
- Improve local reliability of and accessibility to the public transport network; and
- Maintain and improve the transport network in Enfield including developing potential interventions.

---


13.12 The Development Management Document (2014) primarily focuses on access to new transport of new developments and parking and road standards of new developments. As with the policies in the Core Strategy there is also a focus on supporting the delivery of active transport provisions.

13.13 All of the borough’s area action plans have sections dedicated to movement and transport requirements and infrastructure, for instance:

- The Edmonton Leeside Area Action Plan focuses on encouraging a model shift to active modes of transport and explores options for improving public transport infrastructure.
- The North East Enfield Area Action Plan has a key focus on improving active transport routes and infrastructure as well as enhancements to the West Anglia Mainline and improvement to bus services.

**Baseline review**

**Current**

13.14 The discussion below is set out under thematic sub-headings.

**Strategic road network**

13.15 According to LBE’s Transport Plan the borough’s road network is made up of approximately; 68km of principal roads, 37km of the TfL road network, 51km of non-principal classified roads and 466km of unclassified roads. There are three main roads considered in the borough. Firstly, the M25 which straddles the northern boundary of the borough. The A10 (London to Cambridge) which runs straight up through the borough, slightly right of centre. The A10 has also been described as the physical indicator of the east/west inequalities divide that characterises LBE. Finally, the A406 (The North Circular) runs across the southern end of the borough.

13.16 Chapter 3 of this report highlights the air quality hotspots in the borough, which are focused on these three main roads. There is a specific concern of HGV congestion at junction 25 where the M25 and A10 intersect.

13.17 The A10 is also characterised by an east/west divide in terms of type of traffic. It is accessed by residents from the west and mainly industrial traffic from the east of the borough.

**Rail network**

13.18 Overall the borough has 22 train/tube stations. It serviced by four lines:

- The London Underground Piccadilly Line services the west of the borough with four stations, providing a connecting to Heathrow;
- West Anglia Main line to London Liverpool Street to Hertford East;
- London Overground service from London Liverpool Street to Chestnut; and
- Gova Thameslink Railway from Moorgate to Hertford North and Wootton on Stone.

13.19 Network Rail have recently delivered the £170 million Lee Valley Rail programme, which increased capacity on the West Anglia main line. A significant element of this is the delivery of a new four platform train station at Meridian Water to service the new 10,000 home development in the area. LBE worked with the Mayor of London to submit a forward funding bid to the Government’s Housing Infrastructure Fund (HIF). The objective of the bid was to deliver a four Trains Per Hour service and road infrastructure to unlock the early delivery of homes at Meridian Water.

**Walking and cycling network**

13.20 National Cycle Network (NCN) Routes 1 and 12 run through LBE. Route 1 is a long-distance cycle route that connects Dover to Shetland. It runs through the east of the borough flowing the River Lea. Route 12 is still under construction but when completed will connect Enfield Lock to Stevenage.
13.21 LBE have set up a programme ‘Cycle Enfield’ programme to deliver cycling and walking schemes across the borough. The programme has three main aims:

- transforming our high streets and town centres;
- promoting more active forms of travel to improve our health; and
- creating safe and secure cycle routes for everyone.

13.22 The borough’s transport plan notes that Enfield is one of five Outer London boroughs identified as having the greatest number of potentially cyclable trips, nearly 80% of car trips in Enfield are of cyclable length. Figure 13.2 demonstrates the borough’s established cycle routes (in green) that service the borough currently.
Figure 13.2: Established cycle routes within LBE ¹⁰⁹

¹⁰⁹ Cycle Enfield (2019) http://cycleenfield.co.uk/
Bus network

13.23 The borough is served by a network of 38-day bus routes, 7 school-day only services and 8-night bus routes, which all together service 547 bus stops in the borough. The North London Sub-Regional Transport Plan report states that travelling by bus accounts for 14% of all journeys made by LBE residents.

Car and van accessibility

13.24 Figure 13.3 is taken from 2011 ONS Census data, it demonstrates that 32.47% of LBE residents do not own a car or van. This is notable for being a significantly lower proportion than at a London regional level (where 41.55% of people do not own a car or van) but significantly higher than England as a whole (where 26% of people do not own a car or van). This may reflect the level of public transport accessed in the borough. However, given LBE’s issues around inequality and deprivation it is likely this is a result of affordability of owning car, especially as TfL note that Londoners are more likely to own a car if they live in outer London.

![Figure 13.3 Car and van ownership](image1)

![Figure 13.4: Method of travel to work](image2)

---

110 ONS (2011), Census 2011: ‘Car or Van Availability 2011’

111 ONS (2011), Census 2011 ‘Method of travel to work’
13.25 Figure 13.4 stand out issue is that significantly more people from Enfield drive a car or van to work in comparison to London. This may be due to the high level of access to the strategic road network, as demonstrated earlier in the chapter. This may reflect poor accessibility to public transport options, although it may also provide an insight into the spatial distribution of job opportunities for LBE residents, who may seek work in neighbouring authorities outside of London.

13.26 This may explain why the number of LBE residents that use public transport to travel to work totals to 25.06%, whereas the corresponding number for London is 32.64%.

13.27 It is important to note that this data should be viewed in the context of LBE’s location within Greater London. Statistical comparison with England as a whole should be caveated by the understanding that the public transport model in London, as well as the extent, capacity and modal variety of the network is unique in England. In this context it is likely to be more instructive to compare public transport use in LBE to that of Greater London rather than to England as a whole.

13.28 Given London’s recent focus on the delivery of sustainable and active modes of transport and the establishment of Cycle Enfield; this scoping report has not analysed the ONS Census 2011 figures for walking and cycling. As it is likely that this would not give an accurate representation of the figures for those residents who do travel to work using active modes.

**Future**

13.29 The Ultra-Low Emission Zone (ULEZ) will become active in the southern section of the borough, below the A406 from 2021, which will have a bearing on traffic movements. There is also political support from the borough to extend the ULEZ to cover the entirety of the borough.

13.30 The London wide transport objectives for a model shift from private vehicle and focus on the Healthy Streets programme is supported within the borough’s transport plan 2019 – 2041. This should facilitate a move to more sustainable modes of transport. TfL funding channels such as the Liveable Neighbourhood funds will provide a catalyst towards more cycle and pedestrian orientated transport network. Cycle Enfield has won £9m of Liveable Neighbourhood funding to deliver an active transport scheme in Enfield Town.

13.31 A business case for a Rapid Transit Study is underway (with TFL) in response to proposal 92 in the Mayor’s Transport Strategy, which should be available in March 2020. There are 2 potential routes, which would deliver a solution to the east/west transport severance in the borough:

- The A406, Meridian Water, New Southgate and connections through to Barnet and Waltham Forest.
- An A110 route via Enfield Town, industrial areas with potential for intensification and Cockfosters.

13.32 As LBE develops over time it is likely that built densities will increase, particularly around transport hubs which are often the most sustainable locations for high density growth. This will inevitably introduce new demand for services through an increased population. Improved capacity of suburban rail services over the long term, as proposed in the MTS, could help to meet increased demand.

13.33 Highways England’s M25 Junction 25 Project (2020 -2023) will provide greater capacity but will not resolve great local network congestion. The Council has worked with the Department of Transport, Highways England, Transport for London and adjoining authorities assessing phased highway infrastructure improvements, including the introduction of a new junction at the northern end of the A1055 to provide access to and from the M25 via east-facing on and off slip roads. With this intervention in place, there would be a strong case that the A1055 could fulfil its role as part of Highways England’s Major Road Network. This proposal is the subject of a Road Investment Strategy 2 submission to Government. The borough has a long-term aspiration to reduce commuting by developing a local higher wage economy. This would reduce the need to travel by car, which is the dominate mode of transport to work in LBE.
Key issues and objectives

13.34 The following key issues emerge from the context and baseline review:

- Transport is integral to the success of sustainable approaches to spatial development. In order to tackle the significant environmental threats and social inequalities faced in the borough, the approach to transport must be carefully considered. The key issues uncovered through the scoping exercise have been:

- A greater focus on sustainable and public transport at borough level as well as London wide, is being driven by the links between health and transport. MTS targets in relation to this means LBE will need to facilitate a model shift from borough’s heavy reliance on cars to active and public modes of transport.

- There is a transport infrastructure severance between the east and the west of the borough. This could be resolved through bus rapid transit routes across LBE.

- Despite ULEZ’s expected introduction in 2021, air quality concerns caused by transport may not subside given the focus of air quality problems on the three main roads and the limited scope of ULEZ within the borough.

- Census data from 2011 suggests that the majority of residents use a car to get to work. Whilst lower percentages of residents use public transport to get to work. This would imply that accessibility and availability to active and public transport is an issue for the borough.

13.35 In light of these key issues, it is proposed that the IIA framework should include the following objectives:

Minimise the need to travel, support modal shift away from the private car and address traffic congestion within the borough and along key routes through neighbouring areas, with a focus on emission reduction, health impacts and the delivery of pedestrian friendly urban design.
14. Water

Introduction

14.1 This chapter will explore the water resource and quality context beyond flooding and drought which have been explored through Chapter 4.

14.2 Water resource management is increasingly important topic, especially in the south east of England, although the impacts of climate change on water have been discussed in chapter 4. Population and housing growth alongside climate change leading to higher temperatures and altered rainfall regimes. Many watercourses and aquifers in the South East are already under stress and require careful management to ensure that there is a sustainable water supply in future.

14.3 Of the many environmental challenges Local Planning Authorities in the South of England are facing in meeting housing demand, one certainty is that new development will generate additional wastewater, which must be managed, treated and disposed of.

14.4 Disposal of treated wastewater has a knock-on effect on receiving waterbodies in a variety of biological and chemical ways, combining with multiple other sources of pollution such as agricultural runoff and urban runoff to impact on the overall quality of watercourses.

14.5 It is important to note the close links between water resources and water quality. Low flows in rivers leads to increased concentration of pollutants and in turn lower water quality.

Context

National

14.1 The EU Water Framework Directive (WFD) requires that all member states work to achieve good ecological status in all waterbodies by 2027. Over abstraction from waterbodies (groundwater and surface water) can reduce the ecological status of a watercourse if there is insufficient water left in the watercourse to provide the required habitat. Over abstraction of groundwater can result in ecological impacts by reducing river baseflow; a reduction in flow which is particularly acute during dry weather conditions.

14.2 The Environment Agency (EA) is responsible for monitoring waterbody status across the UK. The effects of abstraction on the ecological status of waterbodies is summarised in their Catchment Abstraction Management Strategy (CAMS).

14.3 The principle users of abstracted water are water companies who use the abstracted water as a source of drinking water for local populations but there is also a significant demand for water for agricultural use.

14.4 Defra and Ofwat are responsible for regulating water companies and ensuring that they maintain minimum levels of service. Relevant legislation includes the Water Supply (Water Quality) Regulations 2010 and the Water Act (2003), which require water companies to produce a statutory Water Resource Management Plan every five years setting out how they intend to meet demand for water in a sustainable way.

14.5 Water companies are also regulated in terms of their impact on the water environment. This includes a requirement for ongoing abstraction licencing by the EA and consideration of the need to support water habitat SSSIs in their area. Thames Water is the water company that supply LBE’s water.

14.6 The Water White Paper 2011 sets out the Government’s vision for a more resilient water sector. It states the measures that will be taken to tackle issues such as poorly performing ecosystems, and the combined impacts of climate change and population growth on stressed water resources.

---

112 HMSO (2000); ‘The Water Supply (Water Quality) Regulations 2000’
14.7 As highlighted in Chapter 4; shortages in public water supply for agriculture, energy generation and industry were one of the key climate risks identified in the NAP (2018). It refers to a 'twin track' approach to maintaining water supplies, namely "the idea of reducing demand, whilst also working to strengthen the resilience of supply in order to meet our goal of providing clean and plentiful water for future generations." It also notably states:

14.8 "Recognising that the scale of some of the infrastructure to provide transfers and additional new resources will be significant, government is committed to delivering a National Policy Statement (NPS) for Water Resources to streamline the planning process for large water resource infrastructure."

14.9 The NPPF’s key message for Local Plans to consider in relation to water resources is:

- Take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for water supply.

**Water quality**

14.10 The WFD requires the UK to classify the current condition of key waterbodies (giving a ‘Status’ or ‘Potential’) and set objectives to either maintain the condition or improve it where a waterbody is failing minimum targets. Any activities or developments that could cause deterioration within a nearby waterbody or prevent the future ability of a waterbody to reach its target Status, must be mitigated so as to reduce the potential for harm and allow the aims of the WFD to be realised.

14.11 River Basin Management Plans (RBMPs) have been produced by the Environment Agency at River Basin District (RBD) scale in England. LBE is covered by the Thames River Basin Management Plan (RBMP)114. The RBMPs assess the current state of the water environment, identify existing pressures and establish objectives for protecting and improving waters. Some key findings from the Thames RBMP have been discussed in the Current Baseline section of this chapter.

14.12 A number of specific UK regulations have been made to implement statutory European and national legislation into law. These regulations include:

- The Anti-Pollution Works Regulations 1999;
- The Environmental Damage Regulations 2009;
- The Water Resources Act (Amendment) (England and Wales) Regulations 2009; and
- The Environmental Permitting (England and Wales) Regulations 2016 which control discharge of water to surface water and groundwater.

14.13 There are two key messages to highlight from the NPPF, in relation to water quality:

- Prevent new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by unacceptable levels of water pollution
- Ensure that, wherever possible development helps to improve local environmental conditions including water quality, taking into account relevant information such as RBMPs

**Regional**

14.14 The Draft London Plan (2017) focuses on water prominently in ‘Chapter 8 Green Infrastructure and Natural Environment’ and ‘Chapter 9 Sustainable Infrastructure’, key policies that have a water resource or quality focus are:

- Policy GG6: Increasing efficiency and resilience: this notes the importance to design infrastructure and buildings that consider the efficient use of water, as an adaption response to Climate Change.

---

• Policy S15: Water Infrastructure: presents a strategic approach to protecting water supply in London through a number of measures including minimising leakage, reducing the water supply deficit, promoting rainwater harvesting and upgrading water supply infrastructure.

14.15 Water Resource Management Plans (WRMPs) are prepared by water companies to ensure supply continues to meet demand into the future, even under water stressed conditions. WRMPs cover 25-year planning periods to ensure that long term needs, trends and changes are considered appropriately at a strategic level. Enfield is covered by the Thames Water WRMP 2015–2040.

14.16 River basin management plans (RBMPs) set out to protect and improve the water environment. It should also be noted that development proposals will need to consider the requirements of the relevant RBMP. LBE is covered by the Thames River Basin District RBMP. The focus is on delivering water quality in line with the WFD. However, there are a number of additional environmental outcomes that the Thames RBMP also commits to including reducing pollution from land management and improving ecological aspects of the water resources covered.

Local

14.17 One of the key issues highlighted in LBE’s Core strategy (2010) is “Promote the protection and enhancement of the Borough’s waterways by improving water quality and ecological diversity through the River Basin Management Plan”. Although the document does not have specific resource and quality related policies it is relevant to a number of policies, including:

• Core Policy 21: Delivering sustainable water supply, drainage and sewerage infrastructure: the policy notes the need and aim to work with a variety of stakeholders to ensure the borough’s future water resource needs, wastewater treatment and drainage infrastructure are managed effectively.

• Core Policy 32: Pollution: the policy seeks to ensure that water quality is not compromised, and to deliver water quality improvements.

14.18 The London Lea Catchment Plan is being delivered by a partnership of stakeholders led by Tnames21. The aim of the plan to improve water quality through reducing pollution and surface water management at source. It also seeks to improve public engagement in the river’s management as well as focusing on biodiversity to help improve the river’s quality and function.

14.19 The borough’s Development Management Document (2014) has a wide variety of water related policies framed under tackling climate change, environmental protection and green infrastructure, a selection of these policies are:

• DMD 58: Water Efficiency; In accordance with LBE’s Core Strategy Policy 21 and the objectives for water efficiency set out in the London Plan all new development will be required to maximise its water efficiency.

• DMD 63: Protection and Improvement of Watercourses and Flood Defences: This notes the need to protect watercourses and ensure that new developments to not prevent the ability to achieve the objectives of the Thames River basin Management Plan.

• DMD 70: Water Quality: New development that adversely affects water quality, including waterways, identified Source Protection Zones (SPZ) or Aquifers will not be permitted.

Baseline Review

Current

14.20 The River Lea is most significant watercourse running through the borough. It is the easternmost tributary to the Thames, joining it at Tower Hamlets. The borough has over 100km of rivers and waterways. The Pymmes Brook, Salmon Brook and Turkey Brook are the main River Lea tributaries that make up LBE’s water network.
14.21 LBE is covered entirely by the London Water Resource Zone (WRZ), the borough’s potable water and its waste water services are supplied by Thames Water. The London supplied mostly by surface water resources (80%) prominently by the River Thames and the River Lea. The remainder is delivered by groundwater abstractions, a desalination plant in Beckton is also used to abstract and treat estuarine water.

14.22 The adopted Thames Water WRMP notes that the Thames Water supply area is “designated as seriously water stressed” meaning that demand is very high in relation to available supply. The resilience of supply could potentially be affected by extreme weather events and climate change patterns as well as technical challenges such as leakage. Whilst it also notes that approximately 25% of the water put into supply is lost through leakages.

14.23 LBE is partially affected by source protection zones (SPZs). This is particularly noticeable in the east and centre of the borough. There are nine SPZ1s that run through the borough, these are surrounded by and connected by three SPZ2s, there are no SPZ3s in the borough boundaries.

- SPZ1 is defined as the 50-day travel time from any point below the water table to the source. SPZ2 is defined by a 400-day travel time from a point below the water table. SPZ3 is defined as the area around a source within which all groundwater recharge is presumed to be discharged at the source.

14.24 Wastewater services for LBE are provided by Thames Water. The Borough is served by the Deephams Sewage Treatment Works (STW), this serves Enfield as well as the neighbouring boroughs of Epping, Waltham, Forest and Haringey.

14.25 Nitrate Vulnerable Zones (NVZs) are areas designated as being at risk from agricultural nitrate pollution, in accordance with the 2015 Nitrate Pollution Prevention Regulations. Waters are defined as polluted if they contain nitrate concentrations greater than 50mg/l. The entirety of the borough is covered by the Lee NVZS443.

Future

14.26 London and the south east is the most densely populated region in the UK, it is estimated that by 2040 the population of this region is likely to rise by approximately 2 million people. This will have a significant impact on water availability for LBE.

14.27 Climate change is expected to increase the frequency and severity of droughts and it is important to maintain a longer term vision of adapting to change beyond water resource planning timetables. However, there is considerable uncertainty about how climate change may impact average annual rainfall, with median current estimates suggesting relatively little change. The most recent UKCP18 data predicts more frequent hot summers even on a low emissions scenario with greater amounts of warming in southern England. More detailed analysis of future rainfall patterns from UKCP18 are expected in 2019, which will be vital in informing longer term resilience on a more regional scale.

14.28 The draft Thames Water WRMP 2019 estimates that by 2100 there will be a shortfall of 864 million litres a day for the Thames Water supply area. This shortfall is expected to start in the next 5 years and rising to 360 million litres of water per day by 2045, emphasising the severity of the issue and need for a joined up strategic approach by all relevant authorities within the Thames Water supply area,

14.29 The Environment Agency is concerned about the quality of effluent being discharged into the River Lee during storms and are setting new consents for the sewage treatment works. For Thames Water to meet the new consents the sewage treatment works needs to be upgrade. Deephams STW currently treats the sewage from about 885,000 people and the upgraded works will need to serve a future population of 941,000.

115 www.metoffice.gov.uk/climate-guide/science/uk/obs-projections-impacts
116 https://www.metoffice.gov.uk/research/collaboration/ukcp
14.30 Future development is unlikely to directly affect the designated Nitrate Vulnerable Zone in LBE on the basis that agricultural activity is a key source of nitrate pollution and development in Enfield is unlikely to introduce new or intensified agricultural activity.

**Key issues and objectives**

14.31 The following key issues emerge from the context and baseline review:

- LBE is supplied by Thames Water for both potable and waste water services and sits within the London WRZ.
- LBE is located within an area of water stress where demand is high and supply subject to constraints.
- The borough is covered by a number of Source Protection Zones (SPZs), meaning development in some locations could have potential to contaminate water supplies without mitigation.
- The borough is serviced by the Deephams STW, however it has been highlighted, by the Environment Agency and LBE, that this service will need significant upgrade in order to continue to service a growing population.

14.32 In light of these key issues, it is proposed that the IIA framework should include the following objectives:

**Minimise water use in new developments through innovative design measures and ensure that development is directed to locations with sufficient wastewater infrastructure capacity.**
15. Next steps

15.1 This report is available for consultation until 23rd March 2019. Comments are welcomed on the proposed IIA framework, identified key issues and sources of evidence that should be taken into account as part of IIA work moving forward.

15.2 Subsequent to consultation on this draft version of the Scoping Report the IIA scope will be finalised and the IIA framework (along with associated understanding of key issues) will be ready for application as part of assessment work, i.e. assessment of reasonable alternatives and the emerging draft plan.

15.3 The intention is that the IIA scope will remain broadly unchanged throughout the course of the plan-making process, although there will naturally be a need to adjust understanding of key issues over time in light of emerging evidence and evolving understanding of the scope of the Local Plan.

15.4 Assessment work will firstly focus ‘reasonable alternatives’ to inform preparation of the draft Local Plan, and then the focus will shift to the emerging draft Local Plan itself. Assessment findings, in respect of both the draft Local Plan and reasonable alternatives, will then be set out within an IIA Report for publication alongside the draft Local Plan.
Appendix I: HRA scoping

Background

AECOM is appointed by London Borough of Enfield Council to assist in undertaking a Habitats Regulations Assessment (HRA) of the Regulation 18 Version of the London Borough of Enfield Local Plan (hereafter referred to as the Local Plan or ‘Plan’). The objectives of the assessment are to be:

- Identify any aspects of the Local Plan that would cause any adverse effect on the integrity of Natura 2000 sites, otherwise known as European sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and, as a matter of Government Policy, Ramsar Sites), either in isolation or in combination with other plans and projects; and,

- To advise on appropriate policy mechanism for delivering mitigation where such effects were identified.

The aim of this appendix is to set out the legislative context, methodology, technical and physical scope and list of other plans and projects to be considered ‘in combination’. It does not present any actual assessment.

Legislation

The need for HRA is set out within Article 6 of the EC Habitats Directive 1992 and interpreted into British law by the Conservation of Habitats & Species Regulations 2017 (Box 1). The ultimate aim of the Habitats Directive is to “maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest” (Habitats Directive, Article 2(2)). This aim relates to habitats and species, not the European sites themselves, although the sites have a significant role in delivering favourable conservation status. European sites (also called Natura 2000 sites) can be defined as actual or proposed/candidate Special Areas of Conservation (SAC) or Special Protection Areas (SPA). It is also Government policy for sites designated under the Convention on Wetlands of International Importance (Ramsar sites) to be treated as having equivalent status to Natura 2000 sites.

Box 1: The legislative basis for Appropriate Assessment

<table>
<thead>
<tr>
<th>Habitats Directive 1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Article 6 (3) states that:</td>
</tr>
<tr>
<td>“Any plan of project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site’s conservation objectives.”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conservation of Habitats and Species Regulations 2017 (as amended)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Regulations state that:</td>
</tr>
<tr>
<td>“A competent authority, before deciding to … give any consent for a plan or project which is likely to have a significant effect on a European site … must make an appropriate assessment of the implications for the plan or project in view of that site’s conservation objectives… The competent authority may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site.”</td>
</tr>
</tbody>
</table>

The Habitats Regulations applies the precautionary principle to Natura 2000 sites (SAC and SPA). As a matter of UK Government policy, Ramsar sites are given equivalent status. For the purposes of this assessment candidate SACs (cSACs), proposed SPAs (pSPAs) and proposed Ramsar (pRamsar) sites are all treated as fully designated sites. In this report we use the term “European designated sites” to refer collectively to the sites listed in this paragraph.
Plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity of the site(s) in question. This contrasts with the SEA Directive which does not prescribe how plan or programme proponents should respond to the findings of an environmental assessment; merely that the assessment findings (as documented in the ‘environmental report’) should be ‘taken into account’ during preparation of the plan or programme. In the case of the Habitats Directive, plans and projects may still be permitted if there are no alternatives to them and there are Imperative Reasons of Overriding Public Interest (IROPI) as to why they should go ahead. In such cases, compensation would be necessary to ensure the overall integrity of the site network.

In 2018, the ‘People Over Wind’ European Court of Justice (ECJ) ruling\(^{119}\) determined that ‘mitigation’ (i.e. measures that are specifically introduced to avoid or reduce the harmful effects of a plan or project on European sites) should not be taken into account when forming a view on likely significant effects. Mitigation should instead only be considered at the appropriate assessment stage. In 2018 the Holohan ruling\(^{120}\) was also handed down by the ECJ. Among other provisions paragraph 39 of the ruling states that ‘As regards other habitat types or species, which are present on the site, but for which that site has not been listed, and with respect to habitat types and species located outside that site, … typical habitats or species must be included in the appropriate assessment, if they are necessary to the conservation of the habitat types and species listed for the protected area’ [emphasis added]. Both rulings will be taken into account in the HRA process as necessary.

Over the years the phrase ‘Habitats Regulations Assessment’ has come into wide currency to describe the overall process set out in the Conservation of Habitats and Species Regulations from screening through to Imperative Reasons of Overriding Public Interest (IROPI). This has arisen in order to distinguish the process from the individual stage described in the law as an ‘Appropriate Assessment’. Throughout this report we use the term Habitats Regulations Assessment for the overall process.

**Scope of the project**

There is no pre-defined guidance that dictates the physical scope of an HRA of a Plan document. Therefore, in considering the physical scope of the assessment, we were guided primarily by the identified impact pathways (called the source-pathway-receptor model) rather than by arbitrary ‘zones’. Current guidance suggests that the following European sites be included in the scope of assessment:

- All European sites within 10km shown to be linked to development in Enfield through a known ‘pathway’ (discussed below).

Briefly defined, impact pathways are routes by which the implementation of a policy within a Local Plan document can lead to an effect upon a European designated site. An example of this would be new residential development resulting in an increased population and thus increased recreational pressure, which could then affect European sites by, for example, disturbance of non-breeding or breeding birds. Guidance from the Ministry of Housing, Communities and Local Government (MHCLG) states that the HRA should be ‘proportionate to the geographical scope of the [plan policy]’ and that ‘an AA need not be done in any more detail, or using more resources, than is useful for its purpose’ (MHCLG, 2006, p.6).

This basic principle has also been reflected in court rulings. The Court of Appeal\(^{121}\) has ruled that provided the Council (competent authority) was duly satisfied that proposed mitigation could be ‘achieved in practice’ to satisfy that the proposed development would have no adverse effect, then this would suffice. This ruling has since been applied to a planning permission (rather than a Core Strategy document)\(^{122}\). In this case the High Court ruled that for ‘a multistage process, so long as there is sufficient information at any particular stage to enable the authority to be satisfied that the proposed mitigation can be achieved in practice it is not necessary for all matters concerning mitigation to be fully resolved before a decision maker is able to conclude that a development will satisfy the requirements of Reg 61 of the Habitats Regulations’.

Given an initial assessment of the relevant European sites and the impact pathways present, and referring to the HRA work that was undertaken for the adopted Local Plan, this HRA will discuss (at least as far as the ToLSE) the following European sites:

---

\(^{119}\) Case C-323/17

\(^{120}\) Case C-461/17

\(^{121}\) No Astraal New Town Ltd (NANT) v Suffolk Coastal District Council Court of Appeal, 17th February 2015

\(^{122}\) High Court case of R (Devon Wildlife Trust) v Teignbridge District Council, 28 July 2015
- Epping Forest SAC (the core of the SAC is in Epping Forest District, but significant areas lie in north London, with the closest being in the London Borough of Waltham Forest, 300 m east of the Enfield borough boundary and c. 1km east of the nearest developed area)

- Lee Valley SPA and Ramsar site (700 m south-east (Walthamstow Wetlands) and 1 km north-east (Turnford & Cheshunt Pits) of the borough boundary). Note that the Lee Valley SPA and Ramsar site must not be confused with the Lee Valley Regional Park. While parts of the SPA/Ramsar site do lie within the Regional Park, it covers a much larger area and wider range of interests than just the SPA/Ramsar site.

- Wormley-Hoddensdonpark Woods SAC (4.3 km north of borough boundary in Broxbourne and East Herts)

### Methodology

#### Introduction

The HRA will be carried out in the continuing absence of formal central Government guidance on HRA of plans, although general EC guidance on HRA does exist and the UK government published general guidance on HRA in July 2019. The former Department for Communities and Local Government (now the Ministry of Housing Communities and Local Government) released a consultation paper on the Appropriate Assessment of Plans in 2006. Natural England has also produced its own internal guidance as has the RSPB. All of these will be referred to in undertaking this HRA. Figure 1 below outlines the stages of HRA of plans according to current draft MHCLG guidance. The stages are essentially iterative, being revisited as necessary in response to more detailed information, recommendations and any relevant changes to the plan until no significant adverse effects remain.

#### Evidence Gathering

- **HRA Task 1**: Likely significant effects (‘screening’) – identifying whether a plan is ‘likely to have a significant effect’ on a European site

- **HRA Task 2**: Ascertaining the effect on site integrity – assessing the effects of the plan on the conservation objectives of any European sites ‘screened in’ during HRA Task 1

- **HRA Task 3**: Mitigation measures and alternative solutions – where adverse effects are identified at HRA Task 2, the plan should be altered until adverse effects are cancelled out fully

*Figure 1: Four Stage Approach to Habitats Regulations Assessment. Source MHCLG, 2006.*

A key technical study that will be undertaken to inform the HRA process is traffic and air quality modelling for Epping Forest SAC. More detail is provided in the Pathways of Impact section.

---


124 https://www.gov.uk/guidance/appropriate-assessment

125 CLG (2006) Planning for the Protection of European Sites, Consultation Paper


HRA Task 1 – Likely Significant Effects (LSE)

Following evidence gathering, the first stage of any Habitats Regulations Assessment is a Likely Significant Effect (LSE) test - essentially a risk assessment to decide whether the full subsequent stage known as Appropriate Assessment is required. The essential question is:

"Is the Plan, either alone or in combination with other relevant projects and plans, likely to result in a significant effect upon European sites?"

The objective is to ‘screen out’ those plans and projects that can, without any detailed appraisal, be said to be unlikely to result in significant adverse effects upon European sites, usually because there is no mechanism for an adverse interaction with European sites.

In evaluating significance, AECOM will rely on our professional judgement as well as the results of previous stakeholder consultation regarding development impacts on the European sites.

The level of detail in land use plans concerning developments that will be permitted under the plans may not always be sufficient to make a detailed quantification of adverse effects for all impact pathways. In these instances, a precautionary approach (in the absence of more precise data) assuming as the default position that if a likely significant effect (LSE) cannot be confidently ruled out, then the assessment must be taken to the next level of assessment Task Two: Appropriate Assessment. This is in line with the April 2018 court ruling relating to ‘People Over Wind’ where mitigation and avoidance measure are to be included at the next stage of assessment.

HRA Task 2 – Appropriate Assessment

European Site(s) which have been ‘screened in’ during the previous Task will have a detailed assessment undertaken on the effect of the policies on the European site(s) site integrity. Avoidance and mitigation measures to avoid adverse significant effects are taken into account or recommended where necessary.

As established by case law, ‘appropriate assessment’ is not a technical term; it simply means whatever further assessment is necessary to confirm whether there would be adverse effects on the integrity of any European sites that have not been dismissed at screening. Since it is not a technical term it has no firmly established methodology except that it essentially involves repeating the analysis for the likely significant effects stage, but to a greater level of detail on a smaller number of policies and sites, this time with a view to determining if there would be adverse effects on integrity.

One of the key considerations during Appropriate Assessment is whether there is available mitigation that would entirely address the potential effect. In practice, the Appropriate Assessment takes any policies or allocations that could not be dismissed following the high-level Screening analysis and analyse the potential for an effect in more detail, with a view to concluding whether there would actually be an adverse effect on integrity (in other words, disruption of the coherent structure and function of the European site(s)).

‘In combination’ assessment

It is a requirement of the Regulations that the impacts of any land use plan being assessed are not considered in isolation but in combination with other plans and project that may also be affecting the European site(s) in question.

For the purposes of this assessment we have determined that, due to the nature of the identified impacts, the other plans and project with potential for in-combination likely significant effects are those that can result in recreational pressure, loss of supporting habitats, reduced air quality, reduced water quality, or increased demand for water resources.

For the purpose of this assessment the following documents will be considered in-combination with the Local Plan:

- London Plan (Intend to Publish) Spatial Development Strategy for Greater London December 2019
- Epping Forest District Local Plan 2011 – 2033 (Submitted Version)
- Adopted London Borough of Redbridge Local Plan (2015 – 2030)
- London Borough of Waltham Draft Local Plan 2020 – 2035 (Consultation Version)

128 Including any commentary or Direction from the Secretary of State (expected by 17 February 2020).
• London Borough of Barking and Dagenham Draft Local Plan 2019 – 2034 (Regulation 18 Consultation Version)
• Adopted London Borough of Newham Local Plan (2018 – 2033)
• London Borough of Tower Hamlets Draft Local Plan 2031
• London Borough of Hackney Draft Local Plan 2033
• Adopted London Borough of Haringey Strategic Policies 2013 (with alterations 2017)
• Adopted London Borough of Haringey Site Allocations DPD (2017)
• Harlow Draft Local Development Plan 2033 (currently preparing for modifications consultation)
• Adopted East Herts District Plan 2018
• Broxbourne Draft Local Plan 2018 2033 (currently undergoing Examination)
• Brentwood Draft Local Plan (Pre-Submission, Regulation 19 Version)
• Barnet, Hertsmere, Utltesford and Welwyn Hatfield Local Plans (currently undergoing Examination)

This list of plans has been devised partly based on catchment data (such as regarding the recreational catchment of Epping Forest SAC) and partly through an understanding of local authority connections around Epping Forest and other European sites. For example, East Herts, Harlow and Uttlesford are included because they are part of the West Essex/East Herts Strategic Housing Market Area and studies on Epping Forest SAC undertaken through Epping Forest District Council have covered the entire HMA.

When undertaking this part of the assessment it is essential to bear in mind the principal intention behind the legislation i.e. to ensure that those projects or plan which in themselves have minor impacts are not simply dismissed on that basis but are evaluated for any significant cumulative contribution they may make to an overall significant effect.

Pathways of impact

Introduction

In carrying out an HRA it is important to determine the various ways in which land use plan can impact on European sites by following the pathways along which development can be connected with European sites, in some cases many kilometres distant. Briefly defined, pathways are routes by which a change in activity associated with a development can lead to an effect upon a European site.

Other Relevant Supporting Studies

In determining pathway-receptor potential for impacts of the Local Plan on European sites, the following data sources will be interrogated:

• The UK Air Pollution Information System (www.apis.ac.uk);
• Visitor studies for relevant European designated sites, where available, notably those undertaken for Epping Forest SAC;
• Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.defra.gov.uk) and its links to SSSI citations (www.naturalengland.org.uk) and the JNCC website (www.jncc.gov.uk);
• Habitats Regulations Assessments of surrounding Local Plans, where available and appropriate to use; and,
• Bespoke traffic and air quality modelling work for Epping Forest SAC which will be undertaken specifically to inform the Enfield Local Plan HRA and will focus on those north London links most likely to be used by traffic originating in Enfield.

Recreational pressure and disturbance including from urbanisation

Recreational use of a European site has the potential to:

• Prevent appropriate management or exacerbate existing management difficulties;
• Cause damage through erosion and fragmentation;
• Cause eutrophication as a result of dog fouling; and
• Cause disturbance to sensitive species, particularly ground-nesting birds and wintering wildfowl.

Different types of internationally designated sites are subject to different types of recreational pressures and have different vulnerabilities. Studies across a range of species have shown that the effects from recreation can be complex.

**Mechanical/abrasive damage and nutrient enrichment**

Most types of land based internationally designated site can be affected by trampling, which in turn causes soil compaction and erosion. Walkers with dogs contribute to pressure on sites through nutrient enrichment via dog fouling and also have potential to cause greater disturbance to fauna as dogs are less likely to keep to marked footpaths and move more erratically. Motorcycle scrambling and off-road vehicle use can cause serious erosion, as well as disturbance to sensitive species.

There have been several papers published that empirically demonstrate that damage to vegetation in woodlands and other habitats can be caused by vehicles, walkers, horses and cyclists:

- Wilson & Seney (1994)\(^{129}\) examined the degree of track erosion caused by hikers, motorcycles, horses and cyclists from 108 plots along tracks in the Gallatin National Forest, Montana. Although the results proved difficult to interpret, it was concluded that horses and hikers disturbed more sediment on wet tracks, and therefore caused more erosion, than motorcycles and bicycles.

- Cole et al (1995a, b)\(^{130}\) conducted experimental off-track trampling in 18 closed forest, dwarf scrub and meadow and grassland communities (each tramped between 0 – 500 times) over five mountain regions in the US. Vegetation cover was assessed two weeks and one year after trampling, and an inverse relationship with trampling intensity was discovered, although this relationship was weaker after one year than two weeks indicating some recovery of the vegetation. Differences in plant morphological characteristics were found to explain more variation in response between different vegetation types than soil and topographic factors. Low-growing, mat-forming grasses regained their cover best after two weeks and were considered most resistant to trampling, while tall forbs (non-woody vascular plants other than grasses, sedges, rushes and ferns) were considered least resistant. Cover of hemicryptophytes and geophytes (plants with buds below the soil surface) was heavily reduced after two weeks but had recovered well after one year and as such these were considered most resilient to trampling. Chamaephytes (plants with buds above the soil surface) were least resilient to trampling. It was concluded that these would be the least tolerant of a regular cycle of disturbance.

- Cole (1995c)\(^{131}\) conducted a follow-up study (in 4 vegetation types) in which shoe type (trainers or walking boots) and trampler weight were varied. Although immediate damage was greater with walking boots, there was no significant difference after one year. Heavier tramplers caused a greater reduction in vegetation height than lighter tramplers, but there was no difference in effect on cover.

- Cole & Spildie (1998)\(^{132}\) experimentally compared the effects of off-track trampling by hiker and horse (at two intensities – 25 and 150 passes) in two woodland vegetation types (one with an erect forb understorey and one with a low shrub understorey). Horse traffic was found to cause the largest reduction in vegetation cover. The forb-dominated vegetation suffered greatest disturbance but recovered rapidly. Higher trampling intensities caused more disturbance.

---


The total volume of dog faeces deposited on sites can be surprisingly large. For example, at Burnham Beeches National Nature Reserve over one year, Barnard estimated the total amounts of urine and faeces from dogs as 30,000 litres and 60 tonnes respectively. The specific impact on Epping Forest SAC has not been quantified from local studies; however, the fact that habitats for which the SAC is designated appear to be subject already to excessive nitrogen deposition, suggests that any additional source of nutrient enrichment (including uncollected dog faeces) will make a cumulative contribution to overall enrichment. Any such contribution must then be considered within the context of other recreational sources of impact on sites.

Disturbance

Concern regarding the effects of disturbance on birds stems from the fact that they are expending energy unnecessarily and the time they spend responding to disturbance is time that is not spent feeding. Disturbance therefore risks increasing energetic output while reducing energetic input, which can adversely affect the ‘condition’ and ultimately the survival of the birds. In addition, displacement of birds from one feeding site to others can increase the pressure on the resources available within the remaining sites, as they have to sustain a greater number of birds.

The potential for disturbance may be less in winter than in summer, in that there are often a smaller number of recreational users. In addition, the consequences of disturbance at a population level may be reduced because birds are not breeding. However, winter activity can still cause disturbance, especially as birds are particularly vulnerable at this time of year due to food shortages, such that disturbance which results in abandonment of suitable feeding areas can have severe consequences. Several empirical studies have, through correlative analysis, demonstrated that out-of-season (October-March) recreational activity can result in quantifiable disturbance:

- Underhill et al counted waterfowl and all disturbance events on 54 water bodies within the South West London Water bodies Special Protection Area and clearly correlated disturbance with a decrease in bird numbers at weekends in smaller sites and with the movement of birds within larger sites from disturbed to less disturbed areas.

- Evans & Warrington found that on Sundays total water bird numbers (including shoveler and gadwall) were 19% higher on Stocker’s Lake LNR in Hertfordshire and attributed this to displacement of birds resulting from greater recreational activity on surrounding water bodies at weekends relative to week days.

- Tuite et al used a large (379 site), long-term (10-year) dataset (September – March species counts) to correlate seasonal changes in wildfowl abundance with the presence of various recreational activities. They found that on inland water bodies shoveler was one of the most sensitive species to disturbance. The greatest impact on winter wildfowl numbers was associated with sailing/windsurfing and rowing.

- Pease et al investigated the responses of seven species of dabbling ducks to a range of potential causes of disturbance, ranging from pedestrians to vehicle movements. They determined that walking and biking created greater disturbance than vehicles and that gadwall were among the most sensitive of the species studied.

A three-year study of wetland birds at the Stour and Orwell SPA, Ravenscroft\textsuperscript{140} found that walkers, boats and dogs were the most regular source of disturbance. Despite this, the greatest responses came from relatively infrequent events, such as gun shots and aircraft noise. Birds seemed to habituate to frequent ‘benign’ events such as those involving vehicles, sailing and horses, but there was evidence that apparent habituation to more disruptive events related to reduced bird numbers – i.e. birds were avoiding the most frequently disturbed areas. Disturbance was greatest at high tide on the Orwell, but birds on the Stour showed greatest sensitivity.

A number of studies have shown that birds are affected more by dogs and people with dogs than by people alone, with birds flushing more readily, more frequently, at greater distances and for longer. In addition, dogs, rather than people, tend to be the cause of many management difficulties, notably by worrying grazing animals, and can cause eutrophication near paths. Nutrient-poor habitats such as heathland are particularly sensitive to the fertilising effect of inputs of phosphates, nitrogen and potassium from dog faeces\textsuperscript{141}.

Underhill-Day\textsuperscript{142} summarises the results of visitor studies that have collected data on the use of semi-natural habitat by dogs. In surveys where 100 observations or more were reported, the mean percentage of visitors who were accompanied by dogs was 54.0%.

However, the outcomes of many of these studies need to be treated with care. For instance, the effect of disturbance is not necessarily correlated with the impact of disturbance, i.e. the most easily disturbed species are not necessarily those that will suffer the greatest impacts. It has been shown that, in some cases, the most easily disturbed birds simply move to other feeding sites, whilst others may remain (possibly due to an absence of alternative sites) and thus suffer greater impacts on their population\textsuperscript{143}. A literature review undertaken for the RSPB\textsuperscript{144} also urges caution when extrapolating the results of one disturbance study because responses differ between species and the response of one species may differ according to local environmental conditions. These facts have to be taken into account when attempting to predict the impacts of future recreational pressure on internationally designated sites.

Disturbing activities are on a continuum. The most disturbing activities are likely to be those that involve irregular, infrequent, unpredictable loud noise events, movement or vibration of long duration (such as those often associated with construction activities). Birds are least likely to be disturbed by activities that involve regular, frequent, predictable, quiet patterns of sound or movement or minimal vibration. The further any activity is from the birds, the less likely it is to result in disturbance.

The factors that influence a species response to a disturbance are numerous, but the three key factors are species sensitivity, proximity of disturbance sources and timing/duration of the potentially disturbing activity.

It should be emphasised that recreational use is not inevitably a problem. Many internationally designated sites are also nature reserves managed for conservation and public appreciation of nature. The Lee Valley Regional Park that encompasses the SPA and Ramsar sites is such an example. At these sites access is encouraged, and resources are available to ensure that recreational use is managed appropriately.

The following European designated sites included in the HRA of the Local Plan are potentially vulnerable to recreational pressure and/or disturbance from the Plan either alone or in-combination with other plans and projects:

- Epping Forest SAC;
- Lee Valley SPA and Ramsar site; and
- Wormley-Hoddesdonpark Woods SAC.

\textsuperscript{143} Gill et al. (2001) - Why behavioural responses may not reflect the population consequences of human disturbance. Biological Conservation, 97, 265-268
\textsuperscript{144} Woodfield & Langston (2004) - Literature review on the impact on bird population of disturbance due to human access on foot. RSPB research report No. 9.
Urbanisation is closely related to recreational pressure, in that they both result from increased populations within close proximity to sensitive sites. The two impact pathways (recreation and urbanisation) will therefore be discussed together in the HRA process. The list of urbanisation impacts can be extensive, but the most significant for the European sites considered in this HRA process (particularly Epping Forest SAC) is risk of increased fly-tipping. The principal adverse ecological effect of tipping is the introduction of invasive non-native species with garden waste. Non-native species can in some situations, lead to negative interactions with habitats or species for which internationally designated sites may be designated. Garden waste results in the introduction of invasive non-native species precisely because it is the 'troublesome and over-exuberant' garden plants that are typically thrown out\textsuperscript{145}. Non-native species may also be introduced deliberately or may be bird-sown from local gardens. For Epping Forest, urbanisation effects are linked with recreational pressure effects and would potentially therefore arise from across the core recreational catchment of the SAC.

The HRA of the Local Plan will incorporate a precautionary buffer of 10km around the borough boundary in order to capture those European sites on which recreational pressure effects from the Local Plan are most likely to arise. There does not appear to be specific visitor survey data for Lee Valley SPA and Ramsar site or Wormley-Hoddesdonpark Woods SAC on which to draw on. However, visitor studies carried out for other inland European sites have frequently determined that most visitors typically arise from within 10 km. Examples include:

- Epping Forest SAC, where visitor surveys have established a core catchment of c. 6km;
- The Thames Basin Heaths SPA, where a 5 km zone has been established in determining a partnership approach to a Thames Basing Heaths Avoidance Strategy that requires mitigation for residential development within that distance of the SPA;
- Oxford Meadows SAC, where over 80% of visitors arose from within 5 km; and
- Ashdown Forest, where a core catchment of 7km has been established.

There is also a precedent established in HRAs of surrounding Local Plans (such as those of East Herts, Harlow, Broxbourne and Epping Forest District) regarding the likely distances from Lee Valley SPA/Ramsar site and Wormley Hoddesdonpark Woods SAC at which recreational visits will arise and this will be considered in the HRA of the Enfield Local Plan.

Regarding Lee Valley SPA/Ramsar site, Turnford & Cheshunt Pits SSSI straddles the boundary between Epping Forest District and Broxbourne. Most of the site is owned by the Lee Valley Regional Park Authority and is managed as a Country Park (River Lee Country Park). Thames Water’s flagship Walthamstow Wetlands project, which opened in October 2017, aims to substantially increase public access to, and use of, Walthamstow Reservoirs, the part of the SPA/Ramsar site south of the Enfield borough boundary. These were little used for recreation prior to 2017 as they were only accessible by prior arrangement. Clearly, Thames Water would not have embarked on the Walthamstow Wetlands initiative (or have been permitted to do it by competent authorities) if it was expected that by providing and promoting greater public access at this location, particularly since both species for which the SPA is designated (gadwall and shoveler) are known to be able to habituate to shore-based human activity and the peak of human recreational use of the Walthamstow Wetlands is likely to be in summer when numbers of gadwall and shoveler are at their lowest. However, Walthamstow Reservoirs has only recently opened and monitoring of recreational use of the site has only recently commenced. It is therefore not impossible that measures to manage or restrict usage of the Walthamstow Wetlands may need to be introduced in the future by the site managers.

With regard to Wormley Hoddesdonpark Woods SAC, Natural England’s Site Improvement Plan (SIP)\textsuperscript{146} indicates that the site is heavily used by the public for recreational purposes. However, it also indicates that recreational activity is generally well-managed. Sensitive management of access points and routes by the site’s main owners has been largely successful in mitigating the potential adverse effects of this high level of use. As such, general recreational pressure is not indicated in the Site Improvement Plan as a current or future obstacle to achieving or maintaining favourable conservation status and preserving the integrity of the SAC. Recreation is actively promoted on this site and most recreation is concentrated on well-established paths. Most of the complex is covered by a High Forest Zone Plan (Hertfordshire County Council 1996) which sets out a framework for woodland management across the whole area. It aims to restore a varied age structure and natural stand types through sustainable forestry.

\textsuperscript{146} http://publications.naturalengland.org.uk/file/6541134543192064 [accessed 12/08/16]
With regards to Epping Forest SAC a visitor study was undertaken in Autumn 2017 and identified that the site has a core recreational catchment (the zone within which 75% of visitors derive) of 6.2 km. Any development within this core recreational range is therefore considered to have a likely significant effect upon the SAC.

Natural England have provided advice to Local Authorities dated 6th March 2019, that states that large net new housing developments (i.e. those delivering more than 100 dwellings) within 3-6.2 km of the SAC should deliver greenspace to maximise their recreational self-sufficiency if possible. Where this is not possible, they can make a financial contribution to access management in the SAC, as can smaller developments (those of less than 100 dwellings). Smaller developments may not need to provide any mitigation. A new visitor survey has been undertaken and will be taken into consideration when the report is published if it reveals any significant change to the core catchment for the SAC.

**Increased water demand and impact on water quality**

The London Borough of Enfield is supplied drinking water and sewerage services by Thames Water. The Thames Water Draft Water Resource Management Plan Overview states that:

“We predict there will be a short fall between the amount of water available and the amount we need -unless we take action. This shortfall will start in the next five years and is forecast to grow to around 360 million litres of water per day by 2045… The challenge is most severe in London.”

Two of the three European sites of consideration within the HRA are potentially vulnerable to water pollution and water resource effects:

- Epping Forest SAC; and,
- Lee Valley SPA and Ramsar site.

In London 80% of the water supply is taken from the River Thames and the River Lee and water is held in reservoirs such as the Walthamstow Reservoirs (part of the Lee Valley SPA and Ramsar site) to use when flow in the rivers is low or of poor quality. The Thames Water reservoirs hold approximately 100 days supply of water.

The Walthamstow Reservoirs are a series of sealed reservoirs, as such the water levels are directly controlled by the site manager (Thames Water) and they have been largely responsible for creating the circumstances that have led to the site being of international importance for gadwall and shoveler.

Although this site is theoretically vulnerable to abstraction, a reduction in the levels of water present in the reservoirs themselves, Thames Water has invested significantly in water supply infrastructure to ensure that London’s water supply is resilient as possible. This includes the construction of an operational desalination plan at Beckton in the north-east London.

With regards to water pollution to the SPA, Deephams WwTW serves north London and discharges into the Salmon Brook, a tributary of the River Lee, but is not connected to the Lee Valley SPA and Ramsar site.

Although Epping Forest is potentially vulnerable to water pollution, the closest part of the borough is approximately 300 west of the SAC with two sealed reservoirs and the River Lee between. This means that any run off from sites would more likely pass directly into the River Lee than Epping Forest SAC at this distance and so an effect is unlikely from this impact pathway.

The HRA screening assessment of Thames Water’s revised draft 2019 Water Resource Management Plan (WRMP19) concluded that of the 33 options included within the preferred programme, 26 options are not likely to have any significant effect on any European site. A Stage 2 Appropriate Assessment was required for seven options where it had not been possible at the screening stage to conclude no likely significant effects in order to determine whether these would adversely affect the integrity of a European site(s) after the consideration of mitigation measures. With the inclusion of the mitigation measures, Thames Water’s revised draft WRMP19 has been assessed to have no adverse effects on the integrity of any European site, either alone or in-combination with other plans or projects.

Therefore, it is considered likely that water resource and quality impacts can be screened out of the HRA.
Atmospheric pollution

The main pollutants of concern for European sites are oxides of nitrogen (NOₓ), ammonia (NH₃) and sulphur dioxide (SO₂). NOₓ and ammonia can have a directly toxic effect upon vegetation. In addition, greater NOₓ or ammonia concentrations within the atmosphere will lead to greater rates of nitrogen deposition to soils. An increase in the deposition of nitrogen from the atmosphere to soils is generally regarded to lead to an increase in soil fertility, which can have a serious deleterious effect on the quality of semi-natural, nitrogen-limited terrestrial habitats.

According to the Department of Transport’s Transport Analysis Guidance, “Beyond 200m, the contribution of vehicle emissions from the roadside to local pollution levels is not significant”¹⁴⁷. This is therefore the distance that has been used throughout this HRA in order to determine whether European sites are likely to be significantly affected by development under the Local Plan.

Epping Forest SAC is known to be adversely affected by relatively poor local air quality alongside the roads that traverse the SAC, and this has been demonstrated to have negatively affected the epiphytic lichen communities of the woodland.

Of the 73,555 residents that commute out of Enfield borough daily for work approximately 2,604 (3.5%) commute via car, van or bus to either the borough of Waltham Forest or Epping Forest District, with the majority of those commuting to Waltham Forest. Moreover, previous work undertaken for Meridian Water has identified that habitats within 200 m of the A406, the major commuting route between Enfield and Waltham Forest and Redbridge, were not the qualifying feature of the SAC (beech woodland) but were oak woodland.

The roads of principal relevance within the London Borough of Enfield regarding journeys to work arising traversing Epping Forest SAC are considered to be:

- The M25, although flows on this road are a regional (south-east England) issue and a relatively small amount of the SAC lies within 200m of the M25 outside Bell Common Tunnel, amounting to approximately 2-3ha (c. 0.2% of the SAC);
- The A406 – this is likely to be the principal route for journey to work movements between Enfield, Waltham Forest, Redbridge and areas further afield, although botanical surveys undertaken for the Meridian Water application identify that no habitats for which the SAC was designated (i.e. heathland or beech forest) actually lie within 200m of this road; and
- Potentially, the A1009 and A110 in Waltham Forest and Redbridge – no heathland is identified as being present within 200m of these links, but we propose collecting data, including a site visit as appropriate, to confirm whether any SAC qualifying woodland (i.e. beech woodland) lies within 200m of these links. Traffic data will also be obtained to determine whether development in Enfield will actually make any meaningful journey to work contribution on those links.

Modelling undertaken for Epping Forest District Local Plan (and the wider East Herts/West Essex Strategic HMA) covered different links within the body of Epping Forest SAC around Wake Arms Roundabout in Essex. However, the modelling identified that the vast majority (over 98%) of the change in NOₓ concentrations on those links over the Epping Forest Local Plan period was attributable to growth in Epping Forest District itself. For this reason, the modelling for Enfield Local Plan will focus on links of more direct relevance to Enfield borough.

The general long-term trend for NOₓ has been one of improvement (particularly since 1990) despite an increase in vehicles on the roads.¹⁴⁸ Total nitrogen deposition¹⁴⁹ to the UK decreased by 13% between 1988 and 2008, while NOₓ concentrations decreased by 50% over the same time period¹⁵⁰. However, it is important to look at this improvement in terms of increased population growth within the borough and in-combination with other boroughs as the increase in population and increase in cars on the road can retard, to a greater or lesser degree, the improvement in NOₓ concentrations seen solely due to improvements in emissions technology.

¹⁴⁷ http://www.dft.gov.uk/webtag/documents/expert/unit3.3.3.php#013; [Accessed 03/01/2020]
¹⁴⁹ Nitrogen deposition consists of two components: oxidised nitrogen from combustion, such as vehicle exhausts, and reduced nitrogen from ammonia, primarily from agriculture. Total nitrogen deposition is both oxidised and reduced nitrogen combined.
Air quality modelling calculations would be consistent with work undertaken for Epping Forest District and would examine levels of NOx, nitrogen deposition, and acid deposition for growth within Enfield borough and in-combination with other plans and projects, where SAC qualifying habitat is confirmed to be present along the modelled links.

**Next steps**

The issues on which we would therefore intend to particularly focus in undertaking HRA of the Local Plan are:

- Recreational pressure and disturbance on Epping Forest; and
- Air Quality in relation to Epping Forest.

Although impacts on Lee Valley SPA/Ramsar site and Wormley Hoddesdonpark Woods SAC would also be discussed.

We would welcome views on the proposed scope of the HRA as outlined above, and also on other plans and projects that you consider need to be included in the HRA. We will then aim to consult with you on draft version of the HRA, allowing amendments and any further work to be undertaken prior to consulting on an updated version of the Local Plan.
Appendix II: Meeting notes

Set out below are records of meetings held during the preparation of this Scoping Report.