Hertsmere Borough Council

Habitats Regulations Assessment of the Hertsmere Local Plan

HRA Report

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Prepared by LUC
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Hertsmere Borough Council

Habitats Regulations Assessment of the Hertsmere Local Plan
HRA Report

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Contents

Chapter 1
Introduction 1

Background to the preparation of the new Hertsmere Local Plan 1
The requirement to undertake Habitats Regulations Assessment of Development Plans 1
Stages of Habitats Regulations Assessment 3
Case law 4
Previous HRA work 5
Structure of this report 5

Chapter 2
Hertsmere Local Plan 6

Chapter 3
Approach to the HRA 9

Screening 9
Appropriate Assessment 13

Chapter 4
HRA Screening 15

Chapter 5
Appropriate Assessment 22

Air pollution 22
Recreation pressure 25
Water quantity 27
Summary of Appropriate Assessment 27

Chapter 6
Conclusions and Next Steps 29

Summary of assessment and conclusions 29
Next steps 31

Appendix A
Attributes of European Sites screened into the HRA A-1

Appendix B
Review of potential for in-combination effects with other local authority plans B-1

Appendix C
Screening matrices C-1

DRAFT

Chapter 1
Introduction

1.1 Hertsmere Borough Council (HBC) has commissioned LUC to undertake a Habitats Regulations Assessment (HRA) of its emerging Local Plan.

1.2 The purpose of this HRA Report is to determine whether the new Local Plan will have likely significant effects on any sites designated as Special Protection Areas (SPAs), Special Areas of Conservation (SACs), or Ramsar sites.

Background to the preparation of the new Hertsmere Local Plan

1.3 Hertsmere is located in southern Hertfordshire on the outer fringes of London and borders the London Boroughs of Barnet, Harrow and Enfield as well as Welwyn Hatfield, Three Rivers, Watford and St Albans Councils. The population of the Borough is primarily concentrated within the four main settlements of Borehamwood, Bushey, Potters Bar and Radlett, in addition to a number of smaller settlements including Aldenham, Elstree, Letchmore Heath, South Mimms, Ridge and Shenley.

1.4 Hertsmere Borough Council is producing a new Local Plan to set the framework for development in the borough over the next 15 years. Once adopted, the Local Plan will replace the existing Hertsmere Local Plan (2012-2027) which consists of the Core Strategy (adopted January 2013), Site Allocations and Development Management Policies Plan (adopted November 2016), Elstree Way Corridor Area Action Plan (adopted July 2015), and the Local Plan Policies Map (published November 2016).

1.5 The new Local Plan will help to identify development needs, and any areas within Hertsmere which need improvement or protection from future development. The new Local Plan will be vital in influencing the determination of planning applications and guiding of investment across the borough; and will replace the current Local Plan in its entirety.

The requirement to undertake Habitats Regulations Assessment of Development Plans

1.6 The requirement to undertake HRA of development plans was confirmed by the amendments to the Habitats

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Regulations published for England and Wales in 2007[1]; the currently applicable version is the Habitats Regulations 2017[2], as amended. When preparing the development plans, Hertsmere Borough Council is therefore required by law to carry out an HRA. The Council can commission consultants to undertake HRA work on its behalf and this (the work documented in this report) is then reported to and considered by Hertsmere Borough Council as the 'competent authority'. The Council will consider this work and would usually[3] only progress a Plan if it considers that the Plan will not adversely affect the integrity[4] of any 'European site', as defined below. The requirement for authorities to comply with the Habitats Regulations when preparing a Plan is also noted in the Government's online Planning Practice Guidance[5] (PPG).

1.7 HRA refers to the assessment of the potential effects of a development plan on one or more sites afforded the highest level of protection in the UK: SPAs and SACs. These were classified under European Union (EU) legislation but, since 1 January 2021, are protected in the UK by the Habitats Regulations 2017[2] (as amended). Although the EU Directives from which the UK's Habitats Regulations originally derived are no longer binding, the Regulations still make reference to the lists of habitats and species that the sites were designated for, which are listed in annexes to the EU Directives:

- SACs are designated for particular habitat types (specified in Annex 1 of the EU Habitats Directive[6]) and species (Annex II).
- SPAs are classified for rare and vulnerable birds (Annex I of the EU Birds Directive[7]), and for regularly occurring migratory species not listed in Annex I.

1.8 The term 'European sites' was previously commonly used in HRA to refer to 'Natura 2000' sites[8] and Ramsar sites (international designated under the Ramsar Convention). However, a Government Policy Paper[9] on changes to the Habitats Regulations 2017 post-Brexit states that:

- Any references to Natura 2000 in the 2017 Regulations and in guidance now refers to the new 'national site network'.
- The national site network includes existing SACs and SPAs; and new SACs and SPAs designated under these Regulations.
- Designated Wetlands of International Importance (known as Ramsar sites) do not form part of the national site network. Many Ramsar sites overlap with SACs and SPAs and may be designated for the same or different species and habitats.

1.9 Although Ramsar sites do not form part of the new national site network, the Government Policy Paper[10] confirms that all Ramsar sites remain protected in the same way as SACs and SPAs. In LUC's view and unless the Government provides any guidance to the contrary, potential effects on Ramsar sites should continue to form part of the HRA of plans and projects since the requirement for HRA of plans and projects that might adversely affect Ramsar sites forms an essential part of the protection confirmed by the Government Policy Paper. Furthermore, the NPPF[11] and practice guidance[12] currently still state that competent authorities responsible for carrying out HRA should treat Ramsar sites in the same way as SACs and SPAs.

1.10 The requirement for HRA does not apply to other nationally designated wildlife sites such as Sites of Special Scientific Interest or National Nature Reserves; therefore, for clarity, this report uses the term 'European sites' rather than 'national site network'.

1.11 The overall purpose of the HRA is to conclude whether or not a proposal or policy, or whole development plan would adversely affect the integrity of the site in question. This is judged in terms of the implications of the plan for a site's 'qualifying features' (i.e. those Annex I habitats, Annex II species, and Annex I bird populations for which it has been designated). Significantly, HRA is based on the precautionary principle. Where uncertainty or doubt remains, an adverse effect should be assumed.

1 The Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007 (2007) SI No. 2007/1843. TSO (The Stationery Office), London.
[2] The Conservation of Habitats and Species Regulations 2017 (2017) SI No. 2017/1012, as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579), TSO (The Stationery Office), London.
[3] The exception to this would be where 'imperative reasons of overriding public interest' can be demonstrated; see paragraph **Error! Reference source not found.**.
[4] The integrity of a site is the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was designated. (Source: UK Government Planning Practice Guidance)
[5] https://www.gov.uk/guidance/appropriate-assessment
[6] Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive')
[7] Directive 2009/147/EC of 30 November 2009 on the conservation of wild birds (the 'Birds Directive')
[8] The network of protected areas identified by the EU: https://ec.europa.eu/environment/nature/natura2000/index_en.htm
[9] https://www.gov.uk/government/publications/changes-to-the-habitats-regulations-2017/changes-to-the-habitats-regulations-2017
[10] https://www.gov.uk/government/publications/changes-to-the-habitats-regulations-2017/changes-to-the-habitats-regulations-2017
[11] NPPF para 176, available from https://www.gov.uk/guidance/national-planning-policy-framework
[12] The HRA Handbook, Section A3. David Tyldesley & Associates, a subscription based online guidance document: https://www.dtapublications.co.uk/handbook/European

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Stages of Habitats Regulations Assessment

1.12 **Table 1.1** summarises the stages involved in carrying out a HRA based on various guidance documents[13],[14]. This HRA presents the methodology and findings of Stage 1: Screening and Stage 2: Appropriate Assessment.

Table 1.1: Stages in HRA

Stage	Task	Outcome
Stage 1: Screening (the 'Significance Test')	Description of the development plan and confirmation that it is not directly connected with or necessary to the management of European sites. Identification of potentially affected European sites and their conservation objectives[15]. Review of other plans and projects. Assessment of likely significant effects of the development plan alone or in combination with other plans and projects, prior to consideration of avoidance or reduction ('mitigation') measures[16].	Where effects are unlikely, prepare a 'finding of no significant effect report'. Where effects judged likely, or lack of information to prove otherwise, proceed to Stage 2.
Stage 2: Appropriate Assessment (the 'Integrity Test')	Information gathering (development plan and data on European sites[17]). Impact prediction. Evaluation of development plan impacts in view of conservation objectives of European sites. Where impacts are considered to directly or indirectly affect qualifying features of European sites, identify how these effects will be avoided or reduced ('mitigation').	Appropriate Assessment report describing the plan, European site baseline conditions, the adverse effects of the plan on the European site, how these effects will be avoided through, firstly, avoidance, and secondly, mitigation including the mechanisms and timescale for these mitigation measures. If effects remain after all alternatives and mitigation measures have been considered proceed to Stage 3.
Stage 3: Assessment where no alternatives exist and adverse impacts remain taking into account mitigation	Identify and demonstrate 'imperative reasons of overriding public interest' (IROPI). Demonstrate no alternatives exist. Identify potential compensatory measures.	This stage should be avoided if at all possible. The test of IROPI and the requirements for compensation are extremely onerous.

1.13 In assessing the effects of the Local Plan in accordance with Regulation 105 of the Habitats Regulations (as amended), there are potentially two tests to be applied by the competent authority: a 'Significance Test', followed, if necessary, by an Appropriate Assessment which will inform the 'Integrity Test'. The relevant sequence of questions is as follows:

- Step 1: Under Reg. 105(1)(b), consider whether the plan is directly connected with or necessary to the management of the sites. If not –
- Step 2: Under Reg. 105(1)(a) consider whether the plan is likely to have a significant effect on the site, either alone or in combination with other plans or projects (the 'Significance Test'). [These two steps are undertaken as part of Stage 1: Screening shown in **Table 1.1:** above.] If Yes –
- Step 3: Under Reg. 105(1), make an Appropriate Assessment of the implications for the site in view of its current conservation objectives (the 'Integrity Test'). In so doing, it is mandatory under Reg. 105(2) to consult Natural England, and optional under Reg. 105(3) to take the opinion of the general public. [This step is

[13] UK Government Planning Practice Guidance, available from https://www.gov.uk/guidance/appropriate-assessment
[14] The HRA Handbook. David Tyldesley & Associates, a subscription based online guidance document: https://www.dtapublications.co.uk/handbook/
[15] Conservation objectives are published by Natural England for SACs and SPAs:
[16] In line with the CJEU judgment in Case C-323/17 People Over Wind v Coillte Teoranta, mitigation must only be taken into consideration at this stage and not during Stage 1: HRA Screening.
[17] In addition to SAC and SPA citations and conservation objectives, key information sources for understanding factors contributing to the integrity of the sites include (where available) conservation objectives supplementary advice and Site Improvement Plans prepared by Natural England: http://publications.naturalengland.org.uk/category/5458594975711232

undertaken during Stage 2: Appropriate Assessment shown in Table 1.1.]

- Step 4: In accordance with Reg.105(4), but subject to Reg.107, give effect to the land use plan only after having ascertained that the plan will not adversely affect the integrity of the European site.

1.14 It is normally anticipated that an emphasis on Stages 1 and 2 of this process will, through a series of iterations, help ensure that potential adverse effects are identified and eliminated through the avoidance of likely significant effects at Stage 1, and through Appropriate Assessment at Stage 2 by the inclusion of mitigation measures designed to avoid, reduce or abate effects. The need to consider alternatives could imply more onerous changes to a plan document. It is generally understood that so called 'imperative reasons of overriding public interest' (IROPI) are likely to be justified only very occasionally and would involve engagement with both the Government and European Commission.

1.15 The HRA should be undertaken by the 'competent authority' - in this case Hertsmere Borough Council, and LUC has been commissioned to do this on its behalf. The HRA also requires close working with Natural England as the statutory nature conservation body in order to obtain the necessary information and agree the process, outcomes and any mitigation proposals.

Case law

1.16 This HRA has been prepared in accordance with relevant case law findings, including most notably the 'People over Wind' and 'Holohan' rulings from the Court of Justice for the European Union (CJEU).

1.17 The *People over Wind, Peter Sweetman v Coillte Teoranta* (April 2018) judgment ruled that Article 6(3) of the Habitats Directive should be interpreted as meaning that mitigation measures should be assessed as part of an Appropriate Assessment and should not be taken into account at the screening stage. The precise wording of the ruling is as follows:

> *"Article 6(3) ……must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of measures intended to avoid or reduce the harmful effects of the plan or project on that site."*

1.18 In light of the above, the HRA screening stage does not rely upon avoidance or mitigation measures to draw conclusions as to whether the Local Plan could result in likely significant effects on European sites, with any such measures being considered at the Appropriate Assessment stage as relevant.

1.19 This HRA also fully considers the *Holohan v An Bord Pleanala* (November 2018) judgement which stated that:

> *Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that an 'appropriate assessment' must, on the one hand, catalogue the entirety of habitat types and species for which a site is protected, and, on the other, identify and examine both the implications of the proposed project for the species present on that site, and for which that site has not been listed, and the implications for habitat types and species to be found outside the boundaries of that site, provided that those implications are liable to affect the conservation objectives of the site.*
>
> *Article 6(3) of Directive 92/43 must be interpreted as meaning that the competent authority is permitted to grant to a plan or project consent which leaves the developer free to determine subsequently certain parameters relating to the construction phase, such as the location of the construction compound and haul routes, only if that authority is certain that the development consent granted establishes conditions that are strict enough to guarantee that those parameters will not adversely affect the integrity of the site.*
>
> *Article 6(3) of Directive 92/43 must be interpreted as meaning that, where the competent authority rejects the findings in a scientific expert opinion recommending that additional information be obtained, the 'appropriate assessment' must include an explicit and detailed statement of reasons capable of dispelling all reasonable scientific doubt concerning the effects of the work envisaged on the site concerned.*

1.20 In undertaking this HRA, LUC consider the potential for effects on species and habitats, including those not listed as qualifying features, to result in secondary effects upon the qualifying features of European sites, including the potential for complex interactions and dependencies. In addition, the potential for offsite impacts, such as through impacts to functionally linked habitat, and or species and habitats located beyond the boundaries of European site, but which may be important in supporting the ecological processes of the qualifying features, has also been fully considered in this HRA.

1.21 The approach to the HRA also takes into consideration the 'Wealden' judgement and the 'Dutch Nitrogen Case' judgements from the Court of Justice for the European Union.

1.22 *Wealden District Council v Secretary of State for Communities and Local Government, Lewes District Council and South Downs National Park Authority* (2017) ruled that it

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was not appropriate to scope out the need for a detailed assessment for an individual plan or project based on the annual average daily traffic (AADT) figures detailed in the Design Manual for Roads and Bridges or the critical loads used by Defra or Environmental Agency without considering the in-combination impacts with other plans and projects.

1.23 In light of this judgement, the HRA therefore considers traffic growth based on the effects of development from the Local Plan in combination with other drivers of growth such as development proposed in neighbouring districts and demographic change.

1.24 The 2018 '*Coöperatie Mobilisation for the Environment and Vereniging Leefmilieu (Dutch Nitrogen)*' judgement stated that:

> *"...the positive effects of the autonomous decrease in the nitrogen deposition…be taken into account in the appropriate assessment…, it is important that the autonomous decrease in the nitrogen deposition be monitored and, if it transpires that the decrease is less favourable than had been assumed in the appropriate assessment, that adjustments, if required, be made."*

1.25 The Dutch Nitrogen judgement also states that according to previous case law:

> *"…it is only when it is sufficiently certain that a measure will make an effective contribution to avoiding harm to the integrity of the site concerned, by guaranteeing beyond all reasonable doubt that the plan or project at issue will not adversely affect the integrity of that site, that such a measure may be taken into consideration in the 'appropriate assessment' within the meaning of Article 6(3) of the Habitats Directive."*

1.26 The HRA of the Local Plan therefore only considers the existence of conservation and/or preventative measures if the expected benefits of those measures are certain at the time of the assessment.

Previous HRA work

1.27 Hertsmere's current development plan, the Core Strategy, was adopted in 2013 but not subject to HRA. A more precautionary approach will be required for the emerging Local Plan, for example in light of the Wealden judgement, which has altered the method by which Natural England expects to see in-combination air pollution effects assessed (and therefore the distance over which contributions to adverse effects might be measured).

1.28 HRA work on the emerging Local Plan began in 2017 with a HRA Scoping Report that was produced by LUC in September 2017 and set out the proposed HRA methodology, identified European sites that could potentially be affected by the Local Plan and identified other plans and programmes that could have in-combination effects with the Local Plan. The scoping report was subject to consultation with Natural England and was published on Hertsmere Borough Council's website.

1.29 This HRA report builds on and updates the information gathered at the scoping stage.

Structure of this report

1.30 This chapter (**Chapter 1**) has introduced the requirement to undertake HRA of the Local Plan. The remainder of the report is structured as follows:

- **Chapter 2**: **Hertsmere Local Plan** summarises the content of the Draft Local Plan, which is the subject of this report
- **Chapter 3**: **Approach to HRA** sets out the approach used and the specific tasks undertaken during the screening and Appropriate Assessment stages of the HRA.
- **Chapter 4**: **HRA screening** describes the findings of the screening stage of the HRA.
- **Chapter 5: Appropriate Assessment** describes the findings of the Appropriate Assessment stage of the HRA.
- **Chapter 6**: **Conclusions and Next Steps** summarises the HRA conclusions and describes the next steps to be undertaken.

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Chapter 2
Hertsmere Local Plan

2.1 Hertsmere Borough Council is currently preparing a new Local Plan to guide development in the Borough over the next 15 years. Once adopted, the new Local Plan will replace the Hertsmere Local Plan (2012-2027) which consists of the Core Strategy (adopted January 2013), the Elstree Way Corridor Area Action Plan (adopted July 2015), the Site Allocations and Development Management Policies Plan (adopted November 2016) and the Policies Map (published November 2016).

2.2 The Core Strategy sets out the Council's vision for the Borough to 2027, providing the foundation for decisions on planning applications and development proposals affecting the area. The adopted Core Strategy seeks to strike a balance between the Borough's housing and economic development needs, social welfare and protection of the environment. The Site Allocations and Development Management Policies Plan sets out detailed proposals and policies by which the Council sees the aims and objectives of the Core Strategy being best achieved.

2.3 The new Local Plan sets out the vision and objectives for the future of Hertsmere up to 2038, and reconsiders housing and employment needs. It will allocate sites for housing, employment and other forms of development and will set out development management policies for the Borough up to 2038.

2.4 The Local Plan's vision is:

> *"Delivering a healthy, resilient, sustainable, connected, high quality and economically viable environment which meets the needs of all the borough's communities, to 2038 and beyond"*

2.5 The Plan articulates this vision in relation to eight themes: future Hertsmere, Hertsmere homes, Hertsmere works, green Hertsmere, healthy Hertsmere, creative Hertsmere, connected Hertsmere, and distinctive Hertsmere.

2.6 This vision is supported by a number of strategic objectives, as follows:

1. Ensure that development meets identified needs sustainably, in locations which are or can be made to be the most accessible by sustainable modes of transport.
2. Ensure that development is well designed and inclusive, respecting local character, enhancing the local environment and encouraging the building of safe, strong and cohesive communities.

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3. Enable the delivery of a minimum of 12,160 new homes of appropriate size, type and tenure to meet the needs of Hertsmere's diverse community, including the elderly, people with additional needs, and gypsies and travellers.
4. Secure the maximum viable provision of affordable homes, including those for rent, for those who are unable to access housing on the open market.
5. Ensure that all new homes are built in places where there is or will be safe and convenient access to schools, health facilities, shops, and other necessary services and facilities.
6. Deliver the first phase(s) of a sustainable new settlement at Bowmans Cross.
7. Ensure the availability of sufficient and suitable land, premises, supporting infrastructure and appropriately skilled workforce to meet the needs of existing and new businesses of all sizes.
8. Provide more and increased choice of employment, training and education opportunities for a growing resident population, with enhanced links between local employers, colleges and schools.
9. Ensure that an expanding film and television industry delivers social, environmental and economic benefits for local communities.
10. Ensure that people can live and work within easy reach of accessible attractive open space.
11. Ensure that town centres are adaptable, thriving, attractive and accessible places that respond to social, economic and legislative change and continue to be a focus for providing for the needs of all Hertsmere's communities.
12. Reduce greenhouse gas emissions and promote the building of greener, more energy efficient, net-zero greenhouse gas emission homes, offices and commercial buildings to help minimise the impact of climate change.
13. Protect and enhance biodiversity and encourage the provision of an expanded green and blue infrastructure network.
14. Facilitate improvements in the physical and mental health of our communities and reduce health inequalities across the borough.
15. Encourage increasingly sustainable patterns of local travel behaviour, secure the provision of better opportunities to travel by foot, cycle and public transport and reduce the need to travel by unsustainable modes of transport.
16. Ensure the provision of infrastructure for increasing use of electric and other less-polluting forms of private transport.
17. Support the improvement and expansion of electronic infrastructure including high speed broadband.
18. Protect the green belt against inappropriate or unplanned development.
19. Retain the distinct and separate identities of towns and villages and ensure that new development reflects the size, pattern and character of the settlement in which they are located.
20. Conserve and enhance historic and culturally important heritage, including locally and nationally listed buildings and structures.

2.7 The plan sets out a number of strategic and development management-style policies and a number of site allocations. These are presented in themed chapters:

- Sustainable growth (seven policies);
- Housing (ten policies);
- Economy (ten policies);
- Green Belt(four policies);
- Climate change (four policies);
- Design (five policies);
- Heritage (four policies);
- Environmental protection (13 policies);
- Local facilities (seven policies);
- Sustainable travel (six policies); and
- Town Centres (10 policies)

2.8 The quantum of development that will be permitted by the Local Plan is set out in Policy H1 – The supply of new homes, which provides for "*at least 12,160 additional dwellings between 2022 and 2038"*; and Chapter 3 – A Strong Local Economy, which projects a requirement for 115ha of employment land during the Plan period.

2.9 The distribution of site allocations across the Borough is shown in **Figure 2.1**:

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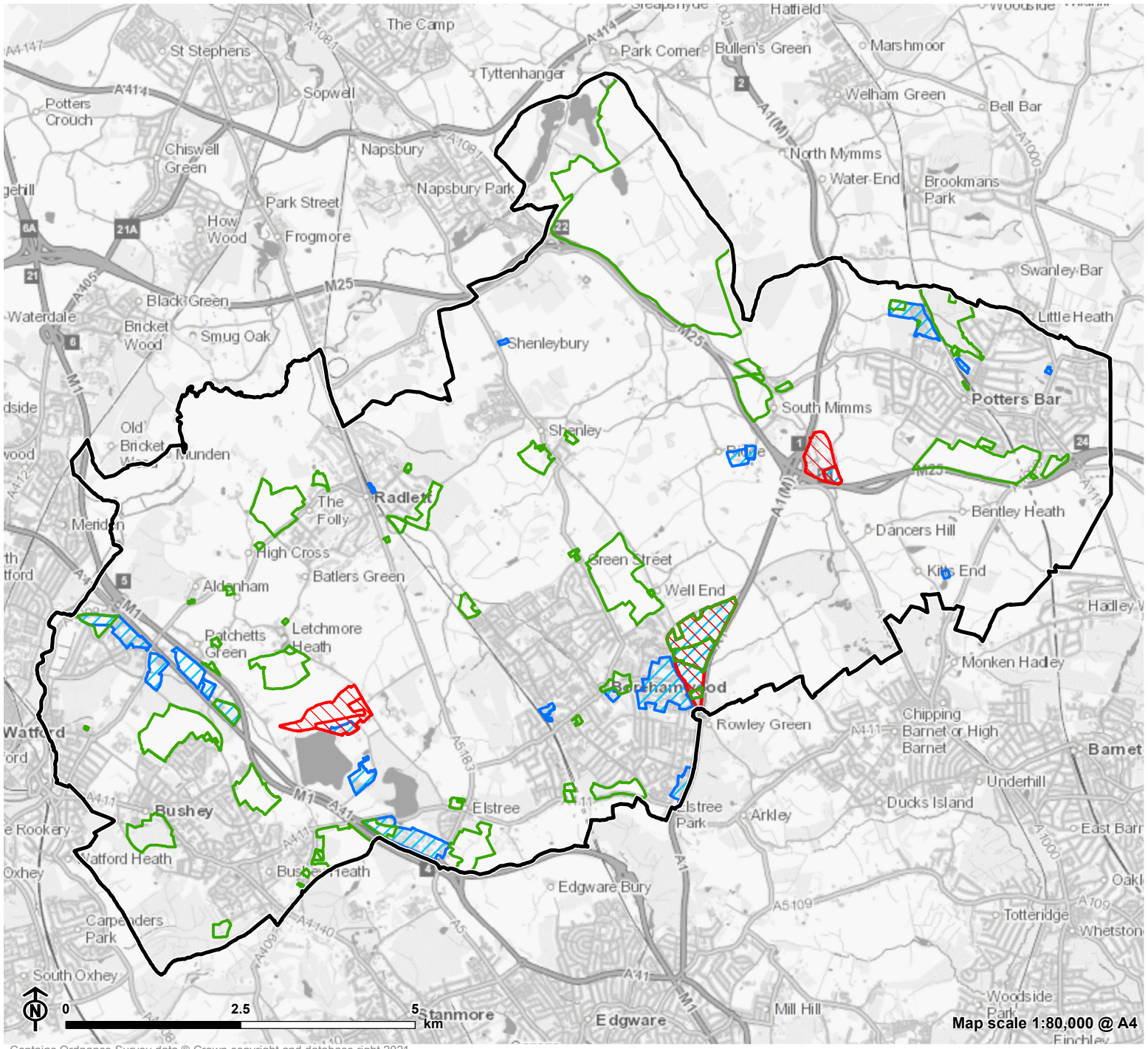
Figure 2.1: Allocated sites



Contains Ordnance Survey data © Crown copyright and database right 2021

CB:JH EB:Harbich_J LUC FIG2-1_10017_r0_AllocatedSites_A4L 13/09/2021
Source: OS, LUC, HBC

Chapter 3
Approach to the HRA

3.1 The Scoping Report (2017) set out the proposed approach to the HRA. Given the time elapsed since the Scoping Report was prepared and the case law and amendments to legislation that have emerged since, the methodology for screening differs somewhat from that presented in the Scoping Report. The updated methodology is set out below.

Screening

3.2 HRA Screening of the Local Plan has been undertaken in line with current available guidance and seeks to meet the requirements of the Habitats Regulations.

3.3 The tasks that have been undertaken during the screening stage of the HRA and the conclusions reached are described in detail below.

3.4 The purpose of the screening stage is to:

- Identify all aspects of the plan which would have no effect on a European site, so that that they can be eliminated from further consideration in respect of this and other plans;
- Identify all aspects of the plan which would not be likely to have a significant effect on a European site (i.e. would have some effect, because of links/connectivity, but which are not significant), either alone or in combination with other aspects of the same plan or other plans or projects, which therefore do not require 'appropriate assessment'; and
- Identify those aspects of the plan where it is not possible to rule out the risk of significant effects on a European site, either alone or in combination with other plans or projects. This provides a clear scope for the parts of the plan that will require appropriate assessment.

3.5 **Chapter 4** and **Appendix C** provide the findings of the HRA screening of the Local Plan.

Identification of European sites which may be affected by the Plan

3.6 In order to initiate the search of European sites that could potentially be affected by a development, it is established practice in HRA to consider sites within the local planning authority area covered by the plan, and other sites that may be affected beyond the plan boundary.

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3.7 A distance of 15km from the boundary of the plan area is typically used in the first instance to identify European sites with the potential to be affected by the proposals within a development plan. Consideration is then given to whether any more distant European sites may be functionally connected to the plan area, for example through hydrological pathways or recreational visits by residents. The 15km distance has been agreed with Natural England for HRAs elsewhere and is considered precautionary.

3.8 The assessment also takes into account areas that may be functionally linked to the European sites. The term 'functional linkage' can be used to refer to the role or 'function' that land beyond the boundary of a European site might fulfil in terms of supporting the species populations for which the site was designated or classified. Such an area is therefore 'linked' to the site in question because it provides a (potentially important) role in maintaining or restoring a protected population at favourable conservation status.

3.9 There are no European sites within Hertsmere but the following European sites are within 15km of the Plan area (see **Figure 3.1**) and have been screened in:

- Wormley Hoddesdonpark Woods SAC (c.5km from Hertsmere);
- Epping Forest SAC (c.11.5km from Hertsmere); and
- Lee Valley SPA and Ramsar (c.9.5km from Hertsmere).

3.10 None of the sites are hydrologically connected to Hertsmere via waterbodies, but Lee Valley SPA/Ramsar has the potential to be linked via discharges into the River Lea at Rye Meads wastewater treatment works and is sensitive to water pollution and hydrological changes.

3.11 HRA work[18] undertaken for Affinity Water's Water Resource Management Plan also identified potential effects on a number of European sites that could arise as a result of proposed infrastructure upgrades required to meet demands for water in the region. The sites potentially affected are: South West London Waterbodies SPA/Ramsar, Cothill Fen SAC, Hackpen Hill SAC, Little Wittenham SAC and Oxford Meadows SAC. Abstraction of water to meet Hertsmere's future housing need therefore has the potential to contribute to effects at these sites.

3.12 Sites beyond 15km that have potential connectivity to the Plan area are therefore considered to be:

- Chilterns Beechwoods SAC, which lies just beyond 15km and is sensitive to air pollution and public access/disturbance[19], both of which can potentially occur over long distances;
- Burnham Beeches SAC, c.18km from Hertsmere and is sensitive to air pollution (A355 road and other sources) and public access / disturbance[20]; and
- South West London Waterbodies SPA/Ramsar (c.20km away), Little Wittenham SAC (c.54km away), Oxford Meadows (c.63km away), Cothill Fen SAC (c.65km away), and Hackpen Hill SAC (c.75km away). All sensitive to changes in water quality/quantity; the SACs are some distance away (>50km) from Hertsmere (and therefore not shown on **Figure 3.1**).

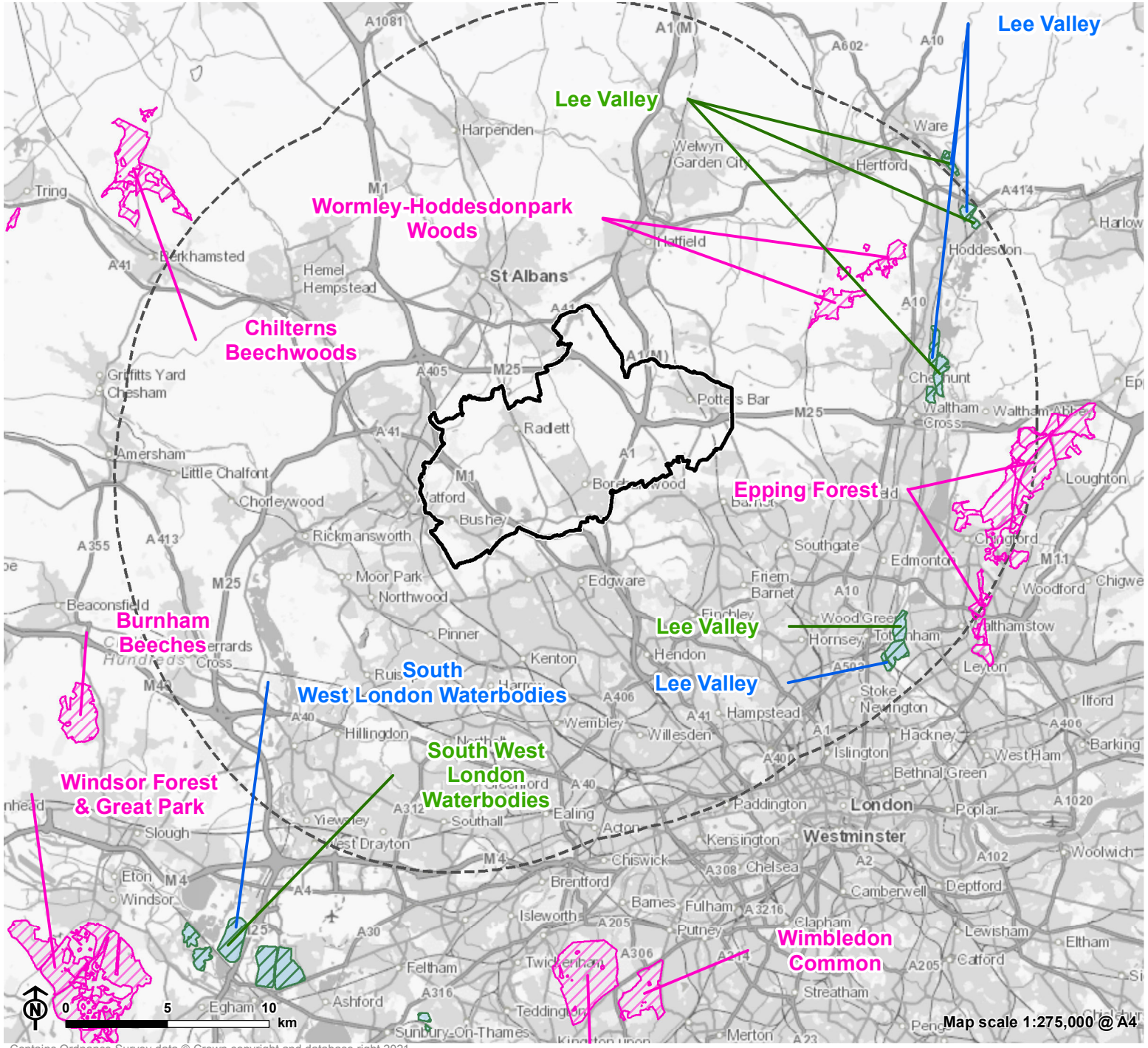
3.13 Some European sites may also rely on functionally linked habitats outside the designated site area (more likely where there are highly mobile species such as birds and bats). Relevant sites with mobile species are:

- Epping Forest SAC (stag beetle);
- Lee Valley SPA/Ramsar (great bittern [SPA only], northern shoveler, and gadwall); and
- South West London Waterbodies SPA/Ramsar (c.20km from Hertsmere) (northern shoveler and gadwall).

3.14 No additional sites to those listed above beyond 15km from Hertsmere are therefore considered in this HRA as they do not contain highly mobile species that may use functionally linked habitat within Hertsmere.

3.15 The location of each European site (with the exception of the SACs >50km away) is provided in **Figure 3.1:**, and described in **Appendix A** with reference to Standard Data Forms for the SPAs and SACs, and Natural England's Site Improvement Plans[21]. Natural England's conservation objectives[22] for the SPAs and SACs have also been reviewed. These state that site integrity must be maintained or restored by maintaining or restoring the habitats of qualifying features, the supporting processes on which they rely, and populations of qualifying species.

[18] Aecom (2019) Technical Report: 4.12 Habitats Regulations Assessment, Water Resources Management Plan 2020-2080, March 2020, https://www.affinitywater.co.uk/docs/4.12_Habitat_Regulations_Assessment_Final_WRMP19.pdf
[19] Site Improvement Plan for Chilterns Beechwoods (2015): http://publications.naturalengland.org.uk/publication/6228755680854016
[20] Site Improvement Plan for Burnham Beeches (2014): http://publications.naturalengland.org.uk/publication/5689860228644864
[21] Obtained from the Natural England website (www.naturalengland.org.uk)
[22] Obtained from Natural England website http://publications.naturalengland.org.uk/category/6490068894089216


Lee Valley
Lee Valley
Wormley-Hoddesdonpark Woods
Chilterns Beechwoods
Epping Forest
Lee Valley
Lee Valley
Burnham Beeches
South West London Waterbodies
South West London Waterbodies
Windsor Forest & Great Park
Wimbledon Common
St Albans
Harpenden
Welwyn Garden City
Hertford
Ware
Hatfield
Hoddesdon
Tring
Berkhamsted
Hemel Hempstead
Chesham
Amersham
Little Chalfont
Chorleywood
Rickmansworth
Radlett
Potters Bar
Waltham Cross
Waltham Abbey
Loughton
Chigwell
Southgate
Edmonton
Woodford
Barnet
Finchley
Wood Green
Hornsey
Tottenham
Walthamstow
Leyton
Stoke Newington
Hackney
Islington
Bethnal Green
West Ham
Barking
Ilford
Woolwich
Poplar
London
Westminster
Paddington
Kensington
Chelsea
Camberwell
Deptford
Lewisham
Eltham
Catford
Streatham
Clapham
Fulham
Putney
Barnes
Brentford
Chiswick
Isleworth
Twickenham
Teddington
Hampton
Sunbury-On-Thames
Merton
Ashford
Feltham
Egham
Windsor
Eton
Slough
Yiewsley
West Drayton
Southall
Ealing
Acton
Hillingdon
Wembley
Willesden
Hampstead
Kenton
Harrow
Ruislip
Pinner
Northwood
Moor Park
Edgware
Hendon
Bushey
Watford
Borehamwood
Beaconsfield
Penn
Tylers Green
Hazlemere
Chalfont St Giles
Chalfont St Peter
Gerrards Cross
Iver
Uxbridge
Denham
Ruislip
Harefield
Rickmansworth
Chorleywood
Amersham
Chesham
Berkhamsted
Tring
Hemel Hempstead
St Albans
Harpenden
Welwyn Garden City
Hatfield
Hertford
Ware
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Harlow
Waltham Abbey
Waltham Cross
Potters Bar
Radlett
Borehamwood
Bushey
Watford
Little Chalfont
Chesham
Grittis Yard
Chesham
Tring
Berkhamsted
Hemel Hempstead
St Albans
Harpenden
Welwyn Garden City
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Bushey
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Little Chalfont
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Amersham
Chorleywood
Rickmansworth
Moor Park
Northwood
Pinner
Ruislip
Harefield
Uxbridge
Denham
Iver
Gerrards Cross
Beaconsfield
Penn
Tylers Green
Hazlemere
Chalfont St Giles
Chalfont St Peter

Assessment of 'likely significant effects' of the Local Plan (Screening stage 5)

3.16 As required under Regulation 105 of The Conservation of Habitats and Species Regulations 2017[23] (as amended) (the 'Habitats Regulations'), an assessment has been undertaken of the 'likely significant effects' of the Plan. The assessment has been prepared in order to identify which policies or site allocations would be likely to have a significant effect on European sites.

3.17 The Scoping Report (2017) identified the following potential impacts that could arise as a result of the Local Plan:

- Physical loss of habitat.
- Noise, vibration and light pollution.
- Air pollution.
- Recreation and urban impacts.
- Water quantity and quality.

3.18 A risk-based approach involving the application of the precautionary principle has been adopted in the assessment, such that a conclusion of 'no significant effect' has only been reached where it is considered unlikely, based on current knowledge and the information available, that a Local Plan policy or site allocation would have a significant effect on the integrity of a European site.

3.19 A screening matrix has been prepared (**Appendix C**), which considers the potential for likely significant effects resulting from each policy and site allocation in the Local Plan. A 'traffic light' approach has been used in the screening matrix to record the likely impacts of each policy and site allocation on European sites and their qualifying habitats and species, using the colour categories shown below.

Red	There are likely to be significant effects (Appropriate Assessment required).
Amber	There may be significant effects, but this is currently uncertain (Appropriate Assessment required).
Green	There are unlikely to be significant effects (Appropriate Assessment not required).

3.20 The screening assessment is conducted without taking mitigation (e.g. embedded in policy) into account, in accordance with the 'People over Wind' judgment.

3.21 For some types of impacts, the potential for likely significant effects has been determined on a proximity basis, using GIS data to determine the proximity of potential development locations to the European sites that are the subject of the assessment. However, there are many uncertainties associated with using set distances as there are very few standards available as a guide to how far impacts will travel. Therefore, where assumptions have been made, these are set out in **Chapter 4**.

Interpretation of 'Likely Significant Effect'

3.22 Relevant case law helps to interpret when effects should be considered as a likely significant effect, when carrying out HRA of a land use plan.

3.23 In the Waddenzee case[24], the European Court of Justice ruled on the interpretation of Article 6(3) of the Habitats Directive (translated into Reg. 102 in the Habitats Regulations), including that:

- An effect should be considered 'likely', *"if it cannot be excluded, on the basis of objective information, that it will have a significant effect on the site"* (para 44).
- An effect should be considered 'significant', *"if it undermines the conservation objectives"* (para 48).
- Where a plan or project has an effect on a site *"but is not likely to undermine its conservation objectives, it cannot be considered likely to have a significant effect on the site concerned"* (para 47).

3.24 A relevant opinion delivered to the Court of Justice of the European Union commented that:

> *"The requirement that an effect in question be 'significant' exists in order to lay down a de minimis threshold. Plans or projects that have no appreciable effect on the site are thereby excluded. If all plans or projects capable of having any effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill."*

3.25 This opinion (the 'Sweetman' case) therefore allows for the authorisation of plans and projects whose possible effects, alone or in combination, can be considered 'trivial' or de minimis; referring to such cases as those *"that have no appreciable effect on the site"*. In practice such effects could be screened out as having no likely significant effect – they would be 'insignificant'.

[23] SI No. 2017/2012

[24] *ECJ Case C-127/02 "Waddenzee"* Jan 2004.

3.26 The HRA screening assessment therefore considers whether the Local Plan policies could have likely significant effects either alone or in combination.

In-combination effects

3.27 Regulation 105 of the Habitats Regulations 2017 requires an Appropriate Assessment where "*a land use plan is likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and is not directly connected with or necessary to the management of the site*". Therefore, where likely significant effects are identified for the Local Plan it is necessary to consider whether there may also be significant effects in combination with other plans or projects.

3.28 Where the Local Plan is likely to have an effect on its own e.g. due to water pollution (due to impact pathways being present), but it is not likely to be significant, the in-combination assessment at Screening stage needs to determine whether there may also be the same types of effect from other plans or projects that could combine with the Local Plan to produce a significant effect. If so, this likely significant effect (e.g. water pollution) arising from the Local Plan in combination with other plans or projects, would then need to be considered through the Appropriate Assessment stage to determine if water pollution would have an adverse effect on integrity of the relevant European site. Where the screening assessment has concluded that there is no impact pathway between development proposed in the Local Plan and the conditions necessary to maintain qualifying features of a European site, then there will be no in-combination effects to assess at the Screening or Appropriate Assessment stage. This approach accords with recent guidance on HRA[25].

3.29 If impact pathways are found to exist for a particular effect but it is not likely to be significant from the Local Plan alone, the in-combination assessment will identify which other plans and programmes could result in the same impact on the same European site. This will focus on planned growth (including housing, employment, transport, minerals and waste) around the affected site, or along the impact corridor, for example, if impacts could arise as a result of changes to a waterway, then planned growth in local authorities along that waterway will be considered.

3.30 The potential for in-combination impacts will therefore focus on plans prepared by local authorities that overlap with European sites that are within the scope of this HRA. The findings of any associated HRA work for those plans will be reviewed where available. Where relevant, any strategic projects in the area that could have in-combination effects with the Local Plan will also be identified and reviewed.

3.31 The online HRA Handbook suggests the following plans and projects may be relevant to consider as part of the in-combination assessment:

- Applications lodged but not yet determined, including refusals subject to an outstanding appeal or legal challenge;
- Projects subject to periodic review e.g. annual licences, during the time that their renewal is under consideration;
- Projects authorised but not yet started'
- Projects started but not yet completed;
- Known projects that do not require external authorisation;
- Proposals in adopted plans;
- Proposals in draft plans formally published or submitted for final consultation, examination or adoption.

3.32 The need for in-combination assessment also arises at the Appropriate Assessment stage, as discussed in the Appropriate Assessment section below.

3.33 To help inform any in-combination assessment necessary during the screening and/or Appropriate Assessment stage, the Scoping Report (2017) identified which other plans and projects in addition to the new Hertsmere Local Plan may affect the European sites, including a review of relevant plans to identify those components of nearby plans that could have an impact on the European sites within the Hertsmere boundary (+15km), e.g. areas or towns where additional housing or employment development is proposed near to the European sites (as there could be effects from the transport, water use, infrastructure and recreation pressures associated with the new developments). This information is presented in **Appendix B**.

Appropriate Assessment

3.34 Following the screening stage, if likely significant effects on European sites are unable to be ruled out, the plan-making authority is required under Regulation 105 of the Habitats Regulations to make an 'Appropriate Assessment' of the implications of the plan for European sites, in view of their conservation objectives. Appropriate Assessment should consider the impacts of the plan (either alone or in combination with other projects or plans) on the integrity of European sites with respect to their conservation objectives

[25] The HRA Handbook. David Tyldesley & Associates, a subscription based online guidance document [online] Available at: https://www.dtapublications.co.uk/handbook/European

and to their structure and function[26]. This will involve detailed consideration of plans and projects with the potential for in-combination effects, where relevant.

3.35 Unlike the Screening stage, Appropriate Assessment can take into account mitigation, for example as proposed within Local Plan policies.

3.36 **Chapter 5** sets out the findings of the Appropriate Assessment of the Local Plan.

Assessing the effects on site integrity

3.37 A site's integrity depends on it being able to sustain its 'qualifying features' (i.e. the habitats and species for which it has been designated) and to ensure their continued viability. The Holohan judgement also clarifies that effects on species and habitats not listed as qualifying features, but which could result in secondary effects upon the qualifying features of European sites also need to be considered. The Appropriate Assessment builds upon the information set out in **Chapter 4** of this report, to consider the characteristics of supporting habitats and species that could be affected by impacts identified at the screening stage.

3.38 A high degree of integrity at a site is considered to exist where the potential to meet a site's conservation objectives is realised and where the site is capable of self-repair and renewal with a minimum of external management support.

3.39 A conclusion needs to be reached as to whether or not the Local Plan would adversely affect the integrity of a European site. Assessing the effects on the site(s) integrity involves considering whether the predicted impacts of the Local Plan policies and/or site allocations (either alone or in combination) have the potential to:

- Cause delays to the achievement of conservation objectives for the site.
- Interrupt progress towards the achievement of conservation objectives for the site.
- Disrupt those factors that help to maintain the favourable conditions of the site.
- Interfere with the balance, distribution and density of key species that are the indicators of the favourable condition of the site.
- Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem.
- Change the dynamics of relationships that define the structure or function of the site (e.g. relationships between soil and water, or animals and plants).
- Interfere with anticipated natural changes to the site.
- Reduce the extent of key habitats or the population of key species.
- Reduce the diversity of the site.
- Result in disturbance that could affect the population, density or balance between key species.
- Result in fragmentation.
- Result in the loss of key features.[27]

3.40 The conservation objectives for each SAC and SPA (**Appendix A**) are generally to maintain the qualifying features in favourable condition. Natural England does not define conservation objectives for Ramsar sites but these can often be inferred from those for co-located SAC or SPA features. The Site Improvement Plans for each site provide a high level overview of the issues (both current and predicted) affecting the condition of the designated features on the site(s) and outline the priority measures required to improve the condition of the features. The Appropriate Assessment draws on these to help to understand what is needed to maintain the integrity of the European sites.

3.41 For each site where an uncertain or likely significant effect is identified in relation to the Local Plan, the Appropriate Assessment sets out the potential impacts and makes a judgement (based on the information available) regarding whether the impact will have an adverse effect on the integrity of the site. Consideration is given to the potential for mitigation measures to be implemented that could reduce the likelihood or severity of the potential impacts such that there would not be an adverse effect on the integrity of the site.

[26] Assessment of plans and projects significantly affecting European sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. European Commission Environment DG, November 2001.
[27] Ibid.

Chapter 4
HRA Screening

4.1 The HRA screening of the Local Plan has determined that Appropriate Assessment is required, as likely significant effects from the plan's policies and site allocations cannot be ruled out through screening. The reasoning for this is presented below.

4.2 **Appendix C** sets out the screening of each policy and site allocation in the Local Plan, and this chapter summarises the findings of that process.

Air pollution

4.3 Air pollution is most likely to affect European sites where plant, soil and water habitats are the qualifying features, but some qualifying animal species may also be affected, either directly or indirectly, by deterioration in habitat as a result of air pollution. Deposition of pollutants to the ground and vegetation can alter the characteristics of the soil, affecting the pH and nitrogen levels, which can then affect plant health, productivity and species composition.

4.4 In terms of vehicle traffic, nitrogen oxides (NOx, i.e. NO and NO2) are considered to be the key pollutants. Deposition of nitrogen compounds may lead to both soil and freshwater acidification, and NOx can cause eutrophication of soils and water.

4.5 Based on the Highways Agency Design Manual for Road and Bridges (DMRB) LA105 Air Quality[28] (which was produced to provide advice regarding the design, assessment and operation of trunk roads including motorways), it is assumed that air pollution from roads is unlikely to be significant beyond 200m from the road itself. Where increases in traffic volumes are forecast, this 200m buffer needs to be applied to the relevant roads in order to make a judgement about the likely geographical extent of air pollution impacts.

4.6 The DMRB Guidance for the assessment of local air quality in relation to highways developments provides criteria that should be applied at the Screening Stage of an assessment of a plan or project, to ascertain whether there are likely to be significant impacts associated with routes or corridors. Based on the DMRB guidance, affected roads which should be assessed are those where:

[28] DMRB (2019) LA105 Air Quality, https://www.standardsforhighways.co.uk/dmrb/search/10191621-07df-44a3-892e-c1d5c7a28d90

DRAFT

- *Daily traffic flows will change by 1,000 AADT (Annual Average Daily Traffic) or more; or*
- *Heavy duty vehicle (HDV) flows will change by 200 AADT or more; or*
- *Daily average speed will change by 10 km/hr or more; or*
- *Peak hour speed will change by 20 km/hr or more; or*
- *Road alignment will change by 5 m or more.*

4.7 Where significant increases in traffic are possible on roads within 200m of European sites, traffic forecast data may be needed to determine if increases in vehicle traffic are likely to be significant. In line with the Wealden judgment[29], the traffic growth considered by the HRA should be based on the effects of development provided for by the Plan in combination with other drivers of growth such as development proposed in neighbouring districts and demographic change.

4.8 It has been assumed that only those roads forming part of the primary road network (motorways and 'A' roads) are likely to experience any significant increases in vehicle traffic as a result of development (i.e. greater than 1,000 AADT). As such, where a site is within 200m of only minor roads, no significant effect from traffic-related air pollution is considered to be the likely outcome.

4.9 Epping Forest SAC, Lee Valley SPA/Ramsar, and Wormley Hoddesdonpark Woods SAC are all within 15km of the Hertsmere boundary and within 200m of a strategic road.

4.10 Chilterns Beechwoods SAC lies beyond 15km from Hertsmere but is sensitive to air pollution and the A41 road provides a potential means by which traffic from Hertsmere could contribute to air pollution at the SAC, as the road provides a link from the M25 in/near Hertsmere to Aylesbury and passes close to the Tring Woodlands SSSI portion of the SAC. However, data on commuting from the 2011 census[30] shows that there is little in or out commuting along the A41 between Aylesbury/Tring and Hertsmere; as such, this site has been screened out in relation to air pollution.

4.11 Burnham Beeches is similarly sensitive to air pollution, but its distance and location mean that few vehicles from Hertsmere will contribute to traffic on the A355 (which passes within 200m of the SAC). This site has been screened out in relation to air pollution.

4.12 At this stage, there is no data on potential increases in traffic flows (AADT) arising from the new development to be delivered through the Local Plan to determine whether the DMRB criteria are exceeded, either alone or in combination. As likely significant effects are therefore uncertain, Epping Forest SAC, Lee Valley SPA/Ramsar and Wormley Hoddesdonpark Woods SAC are screened in.

4.13 Policies that set the overall quantum of development and could therefore influence traffic flows across the borough are:

- Policy H1 - The supply of new homes;
- Policy E1 - Scale and distribution of Employment Land; and

4.14 Policies that set out where that development will be located are:

- Policy H3 - Affordable Housing on rural or entry-level exception sites;
- Policy H8 - Redevelopment and loss of residential units;
- Policy H10 – Housing land;
- Policy E2 - Ensuring suitable provision of employment land;
- Policy E4 - South Mimms Motorway Services Area - Special Policy Area;
- Policy E5 - Elstree Aerodrome - Special Policy Area;
- Policy E6 - Media Quarter Borehamwood - Special Policy Area; and
- Policy E9 - Securing mixed-use development.

4.15 Any of the allocated sites could contribute traffic to roads passing the European sites, although this is more likely for allocated sites in the eastern side of Hertsmere.

4.16 There is potential for likely significant effects to occur in relation to air pollution at Epping Forest SAC, Lee Valley SPA/Ramsar and Wormley Hoddesdonpark Woods SAC that therefore requires further consideration at Appropriate Assessment.

Recreation pressure

4.17 Recreational activities and human presence can result in significant effects on European sites as a result of erosion and trampling, associated impacts such as fire and vandalism or disturbance to sensitive features, such as birds through both terrestrial and water-based forms of recreation.

4.18 The plan will result in housing growth, and associated population increase within Hertsmere. Where increases in population are likely to result in significant increases in recreation at a European site, either alone or in-combination, the potential for likely significant effects will require assessment. The Local Plan provides for a total of 12,160 new

[29] Wealden v SSCLG [2017] EWHC 351 (Admin)

[30] UCL DataShine commute: https://commute.datashine.org.uk/

homes over the Plan period, which would be in combination with homes proposed by neighbouring authorities.

4.19 European sites with qualifying bird species are likely to be particularly susceptible to recreational disturbances from walking, dog walking, angling, illegal use of off-road vehicles and motorbikes, wildfowling, and water sports. An increase in recreational pressure from development therefore has the potential to disturb bird populations as a result of both terrestrial and water-based recreation. In addition, recreation can physically damage habitat as a result of trampling and also through erosion associated with boat wash and terrestrial activities such as use of vehicles.

4.20 Each European site will typically have a 'Zone of Influence' (ZOI) within which increases in population would be expected to result in likely significant effects. ZOIs are usually established following targeted visitor surveys and the findings are therefore typically specific to each European site (and often to specific areas within a European site). The findings are likely to be influenced by a number of complex and interacting factors and therefore it is not always appropriate to apply a generic or non-specific ZOI to a European Site.

4.21 Epping Forest SAC (heathland and forest qualifying habitats), Wormley Hoddesdonpark Woods SAC (forest) and Lee Valley SPA/Ramsar (bittern, gadwall, and shoveler qualifying species) are sensitive to recreation pressure.

4.22 Chilterns Beechwoods SAC and Burnham Beeches SAC are both sensitive to recreation pressures but beyond 15km from Hertsmere. Visitor surveys[31] for the Ashridge Estate, which incorporates the part of Chilterns Beechwoods SAC nearest to Hertsmere (Ashridge Common and Woods SSSI; c.15.5km from Hertsmere) have found that the majority of visitors to the estate travel from within 10 miles (16km); therefore, visitor numbers from Hertsmere are likely to be low. There are no site allocations within 16km of Chilterns Beechwoods SAC. Similarly, visitor surveys[32] have found that Burnham Beeches SAC receives few visits from Hertsmere. Chilterns Beechwoods SAC and Burnham Beeches SAC are therefore screened out in relation to recreation pressure.

4.23 Policies that would result in residential development and have been screened in are:

- Policy H1- The supply of new homes;
- Policy H3 - Affordable Housing on rural or entry-level exception sites;
- Policy H8 - Redevelopment and loss of residential units;
- Policy H10 – Housing land; and
- Policy E9 - Securing mixed-use development.

4.24 Any of the residential site allocations could contribute to recreation pressure, although only those within a site's 'Zone of Influence' could have a significant effect (assessed further in **Chapter 5**).

4.25 There is potential for likely significant effects to occur in relation to recreation pressure at Epping Forest SAC, Lee Valley SPA/Ramsar and Wormley Hoddesdonpark Woods SAC that therefore requires further consideration at Appropriate Assessment.

Water quantity and quality

4.26 An increase in demand for water abstraction and treatment resulting from the growth proposed in the Local Plan could result in changes in hydrology at European sites. Depending on the qualifying features and particular vulnerabilities of the European sites, this could result in likely significant effects; for example, due to changes in environmental or biotic conditions, water chemistry and the extent and distribution of preferred habitat conditions.

4.27 None of the European sites within 15km of Hertsmere that are sensitive to changes in water quality or quantity are potentially hydrologically connected to Hertsmere.

4.28 A potential hydrological link with the Plan area was identified in the HRA Scoping Report as Rye Meads wastewater treatment works (WwTW) discharges into the River Lee, upstream from the Lee Valley SPA/Ramsar; however, Rye Meads WwTW does not serve Hertsmere[33]. Effects relating to water quality are therefore screened out.

4.29 HRA work[34] undertaken for Affinity Water's Water Resource Management Plan[35] (WRMP) identified potential effects on a number of European sites that could arise as a result of proposed infrastructure upgrades required to meet demands for water in the region. The sites potentially affected are: South West London Waterbodies SPA/Ramsar, Cothill Fen SAC, Hackpen Hill SAC, Little Wittenham SAC and Oxford Meadows SAC. Abstraction of water to meet

[31] Dacorum Borough Council (2020) Topic Paper for the Chilterns Beechwoods SAC: https://www.dacorum.gov.uk/docs/default-source/strategic-planning/topic-paper-for-the-chilterns-beechwoods-sac---main-report.pdf and
Tourism South East Research Unit (2008) Chilterns AONB Visitor Survey 2007: https://www.chilternsaonb.org/uploads/files/ConservationBoard/Chilterns_AONB_Visitor_Survey_2007.pdf

[32] Footprint Ecology (2014) Burnham Beeches Visitor Survey, unpublished report for Corporation of London: https://www.southbucks.gov.uk/media/5804/Burnham-Beeches-Visitor-Survey-2014/pdf/Burnham_Beeches_Visitor_Survey_2014.pdf

[33] Stevenage Borough Council (2009) Rye Meads Water Cycle Strategy, https://www.broxbourne.gov.uk/downloads/file/867/pp-hyder-rye-meads-water-study

[34] Aecom (2019) Technical Report: 4.12 Habitats Regulations Assessment, Water Resources Management Plan 2020-2080, March 2020, https://www.affinitywater.co.uk/docs/4.12_Habitat_Regulations_Assessment_Final_WRMP19.pdf

[35] Affinity Water (2020) Water Resources Management Plan 2020-2080, https://www.affinitywater.co.uk/docs/Affinity_Water_Final_WRMP19_April_2020.pdf

Hertsmere's future housing need therefore has the potential to contribute to effects at these sites. These effects would not be due to the Hertsmere Local Plan alone, but in combination with other plans and projects, as they relate to the need to upgrade water supply infrastructure to meet the needs of the whole region, as set out in the WRMP.

4.30 Although the WRMP HRA concluded that there would be no adverse effects on the integrity of any of these sites as a result of the WRMP, a small amount of uncertainty remains as the quantum of new development considered in the WRMP HRA's in-combination assessment was based on Local Plans that in some cases were quite old (several more than ten years old). As a precaution, therefore, the potential for effects associated with changes in water quality or quantity associated with water supply for new development in Hertsmere to combine with other development planned in the WRMP region have been screened in.

4.31 Policies and allocated sites resulting in new development (particularly residential development) could increase demand for water supply and therefore affect European sites:

- Policy H1 - The supply of new homes;
- Policy E1 - Scale and distribution of Employment Land; and
- Policy H3 - Affordable Housing on rural or entry-level exception sites;
- Policy H8 - Redevelopment and loss of residential units;
- Policy H10 – Housing land;
- Policy E2 - Ensuring suitable provision of employment land;
- Policy E4 - South Mimms Motorway Services Area - Special Policy Area;
- Policy E5 - Elstree Aerodrome - Special Policy Area;
- Policy E6 - Media Quarter Borehamwood - Special Policy Area; and
- Policy E9 - Securing mixed-use development.

4.32 There is potential for development pressure on water resources within Hertsmere to combine with other local authority Local Plan requirements in the Affinity Water region and result in likely significant effects in relation to changes in water quantity at South West London Waterbodies SPA/Ramsar, Cothill Fen SAC, Hackpen Hill SAC, Little Wittenham SAC and Oxford Meadows SAC that therefore requires further consideration at Appropriate Assessment.

Impacts on functionally linked habitat: physical loss of habitat; noise, vibration and light pollution; recreation pressure

4.33 Impacts such as physical habitat loss or fragmentation, and non-physical disturbance (noise, light) occur within or close to European sites or their functionally linked habitat.

4.34 Stag beetle are one of the qualifying features of Epping Forest SAC. Although stag beetles may make use of habitats in the surrounding area, they do not travel very far (up to c.2km[36]).

4.35 Lee Valley SPA/Ramsar site is designated for great bittern (SPA only), northern shoveler, and gadwall. These species predominantly use open water and wetland habitats, although Northern Shoveler and Gadwall occasionally breed away from the water if there is no suitable habitat nearby[37]. As the SPA/Ramsar provides a range of habitats, it is likely that only sites with significant wetland habitats, or those very close to the SPA/Ramsar could support offsite habitats used by the SPA and Ramsar species. These bird species may make use of other waterbodies along the River Lea, although it is more likely that functionally linked habitat will be located north of the nearest portion of Lee Valley SPA/Ramsar (Walthamstow Reservoirs SSSI), where other areas of open water are. Functionally linked habitat associated within European sites within 15km of Hertsmere therefore does not need to be considered in this HRA.

4.36 South West London Waterbodies SPA/Ramsar is c.20km south of Hertsmere and its qualifying bird species are sensitive to public access / disturbance[38]. There is a network of waterbodies principally associated with the River Colne and former minerals extraction sites in the wider area, which have the potential to be functionally-linked to the South West London Waterbodies SPA/Ramsar (or Lee Valley SPA/Ramsar). The River Colne flows south through the western edge of Hertsmere, and gadwall (a species associated with both the South West London Waterbodies SPA/Ramsar and Lee Valley SPA/Ramsar) have been recorded[39] at Hilfield Park Reservoir in Hertsmere, which is adjacent to Aldenham Reservoir. However, the distance from the SPA/Ramsar is such that, even if individuals from the European site visit waterbodies in Hertsmere, the reservoirs are unlikely to be significant to the qualifying bird species.

[36] Radio-telemetric monitoring of dispersing stag beetles: implications for conservation: http://onlinelibrary.wiley.com/doi/10.1111/j.1469-7998.2006.00282.x/abstract
[37] http://www.birdlife.org/datazone
[38] Site Improvement Plan for South West London Waterbodies (2014): http://publications.naturalengland.org.uk/publication/6662064386867200
[39] http://www.hef.org.uk/nature/biodiversity_vision/chapter_05_wetlands.pdf

Case law[40] relating to the proposed HS2 railway line found that Colne Valley SSSI, which is closer to the SPA/Ramsar than Hertsmere's reservoirs and has a greater diversity of habitats that would attract SPA/Ramsar bird species, found that the likelihood of significant effects on functionally linked habitat was 'very low'.

4.37 As there is no functionally linked habitat within or near Hertsmere, these effects have been screened out and will therefore not be assessed in the Appropriate Assessment.

Screening conclusion

4.38 Appropriate Assessment is required as likely significant effects from the Local Plan, alone or in combination with other projects or plans, cannot be ruled out without further assessment (which would include taking mitigation into account).

4.39 The scope of the Appropriate Assessment has been narrowed down by considering each policy in turn, to determine whether it would result in the type of development that could have an effect on a European site.

4.40 The policies in the Local Plan that permit the type of development that could affect European sites are summarised in **Table 4.1:**; all site allocations are screened in.

4.41 Table 4.2: summarises the conclusions of the HRA Screening, setting out those impacts that have been screened out as there is no impact pathway (grey) and those with potential LSEs (orange).

Table 4.1: Policies giving rise to the need for Appropriate Assessment of the Local Plan

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Reason policy requires Appropriate Assessment
Policy H1- The supply of new homes at least 12,160 new dwellings within plan period	Residential development Increase in vehicle traffic Increase in recreation pressure Increase in demand for water abstraction and treatment	Increased air pollution Disturbance from recreation Change in water quantity and quality	Yes – This policy sets out the overall quantum of housing development from the Local Plan and therefore will contribute to impacts that arise from the scale of development, for example air pollution, recreation disturbance and changes in water quantity. Effects associated with development in specific locations (e.g. recreation pressure) are assessed in relation to the allocated sites and Policy H10.
Policy H3 - Affordable Housing on rural or entry-level exception sites	Residential development Increase in vehicle traffic Increase in recreation pressure Increase in demand for water abstraction and treatment	Increased air pollution Disturbance from recreation Change in water quantity and quality	Yes – this policy allows for small scale development within rural areas, outside of the allocated sites. Although the overall quantum of Housing development will be assessed in relation to policy H1 and development arising under Policy H3 will be small in scale, the policy sets the principle of housing development outside the allocated sites, which may be relevant to location-specific effects such as recreation pressure.
Policy H8 - Redevelopment and loss of residential units	Residential development Increase in vehicle traffic Increase in recreation pressure Increase in demand for water abstraction and treatment	Increased air pollution Disturbance from recreation Change in water quantity and quality	Yes – this policy allows for densification of housing development within urban areas, outside of the allocated sites. Although the overall quantum of Housing development will be assessed in relation to policy H1, this policy sets the principle of housing development outside the allocated sites, which may be relevant to location-specific effects such as recreation pressure.
Policy H10 – Housing land 14 strategic sites (BE3, BE5, BE6, B1, B2, B3,	Residential development Associated community, transport and green infrastructure Increase in vehicle traffic	Increased air pollution Disturbance from recreation Change in water quantity and quality	Yes – this policy identifies the locations in which housing will be permitted. Although the overall quantum of housing development will be assessed in relation to Policy H1, the distribution of those housing numbers will be assessed in relation to

[40] Buckinghamshire County Council & ORS, R (on the application of) v Secretary of State for Transport (2013), Paragraphs 206-212.

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Reason policy requires Appropriate Assessment
B4, PB2, PB3, R1, R3, S1, SM1, NS1) 36 smaller sites	Increase in recreation pressure Increase in demand for water abstraction and treatment		this policy; this is relevant to location-specific impacts such as recreation pressure.
Policy E1 - Scale and distribution of Employment Land	Employment development Increase in vehicle traffic Increase in demand for water abstraction and treatment	Increased air pollution Change in water quantity and quality	Yes – this policy allows for intensification and redevelopment of existing employment sites, which would contribute to the overall employment provision assessed under Policy E2 but permit development in additional locations (ie existing employment sites rather than allocated sites)
Policy E2 - Ensuring suitable provision of employment land at least 130,600sqm of floorspace / 27.7ha land required for new employment within the plan period 6 allocated sites	Employment development Increase in vehicle traffic Increase in demand for water abstraction and treatment	Increased air pollution Change in water quantity and quality	Yes – this policy sets the overall quantum of employment provision and identifies the locations in which employment will be permitted (at sites allocations and outside these).
Policy E4 - South Mimms Motorway Services Area - Special Policy Area	Employment development Increase in vehicle traffic Increase in demand for water abstraction and treatment	Increased air pollution Change in water quantity and quality	Yes – although this policy largely safeguards the existing site for uses that are appropriate to a motorway service area, it does also allow new employment uses.
Policy E5 - Elstree Aerodrome - Special Policy Area	Development that supports or relates to aerodrome activities e.g. research, offices, maintenance facilities Increase in vehicle traffic	Increased air pollution	Yes – the policy permits new uses at the site, which could increase trips to the site. This policy is focussed on aerodrome uses on the ground, rather than changes in the number of flights.
Policy E6 - Media Quarter Borehamwood - Special Policy Area Approximately 63.1ha of employment land to be developed during the plan period	Employment development Hotel (approx. 200 rooms), school; associated transport and green infrastructure. Increase in vehicle traffic Increase in recreation pressure Increase in demand for water abstraction and treatment	Increased air pollution Recreation pressure Change in water quantity and quality	Yes – the scale of the development will contribute to changes in traffic flows and demand for water abstraction and treatment. The hotel may contribute to a slight increase in visitor numbers at nearby European sites but this is not considered likely to be significant.
Policy E9 - Securing mixed-use development c. 230 homes and c.16,000m2 employment 2 allocated sites	Residential development Employment development Increase in vehicle traffic Increase in recreation pressure Increase in demand for water abstraction and treatment	Increased air pollution Recreation pressure Change in water quantity and quality	Yes – this policy allocates development at two sites and permits development outside of these areas. Although the overall quantum of employment and housing has been assessed in relation to Policies H1 and E2, impacts associated with the location of development are assessed in relation to this policy.

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Table 4.2: Summary of screening assessment

European Site	Air pollution	Recreation pressure	Water quantity and quality	Impacts on functionally linked habitat
Epping Forest SAC	Potential LSE	Potential LSE	No impact pathway	No impact pathway
Lee Valley SPA/Ramsar	Potential LSE	Potential LSE	No impact pathway	No impact pathway
Wormley Hoddesdonpark Woods SAC	Potential LSE	Potential LSE	No impact pathway	No impact pathway
South West London Waterbodies SPA/Ramsar	No impact pathway	No impact pathway	Potential LSE in-combination (water quantity)	No impact pathway
Cothill Fen SAC	No impact pathway	No impact pathway	Potential LSE in-combination (water quantity)	No impact pathway
Hackpen Hill SAC	No impact pathway	No impact pathway	Potential LSE in-combination (water quantity)	No impact pathway
Little Wittenham SAC	No impact pathway	No impact pathway	Potential LSE in-combination (water quantity)	No impact pathway
Oxford Meadows SAC	No impact pathway	No impact pathway	Potential LSE in-combination (water quantity)	No impact pathway

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Chapter 5
Appropriate Assessment

5.1 The HRA screening has identified the need for Appropriate Assessment, as likely significant effects from the Local Plan (alone or in combination with other projects or plans) cannot be ruled out without further assessment.

5.2 For each type of impact that has been identified, the Appropriate Assessment considers the effects on each of the European sites, the elements of the Local Plan (and other plans or projects, where relevant) that would have those effects, and any mitigation or safeguards in place that would reduce the effects. The assessment then considers whether there would be an adverse effect on the integrity of a European site.

Air pollution

5.3 The HRA screening was not able to rule out likely significant effects in relation to air pollution at Epping Forest SAC or Wormley Hoddesdonpark Woods SAC. Air pollution could arise from development associated with the following policies and all of the allocated sites, alone or in combination with other plans or projects:

5.4 Policies that set the overall quantum of development:

- Policy H1- The supply of new homes;
- Policy E1 - Scale and distribution of Employment Land; and

5.5 Policies that set out where that development will be located:

- Policy H3 - Affordable Housing on rural or entry-level exception sites;
- Policy H8 - Redevelopment and loss of residential units;
- Policy H10 – Housing land;
- Policy E2 - Ensuring suitable provision of employment land;
- Policy E4 - South Mimms Motorway Services Area - Special Policy Area;
- Policy E5 - Elstree Aerodrome - Special Policy Area;
- Policy E6 - Media Quarter Borehamwood - Special Policy Area; and
- Policy E9 - Securing mixed-use development.

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Epping Forest SAC

5.6 Epping Forest SAC's heathland and forest (qualifying habitats) are identified on the Site Improvement Plan[41] as being sensitive to atmospheric nitrogen deposition, to which vehicle emissions are a major contributor. Much of the site is in unfavourable[42] condition due to air pollution.

5.7 Epping Forest SAC lies within 200m of a number of major roads including the following within and including the north circular: M25, A12, A104, A110, A112, A113, A114, A121, A406, A503, A1009, A1069, and A1199. The M25 and A110 provide the most direct access from Hertsmere and provide the route by which the other roads would be accessed. The habitats within 200m of these roads are mainly deciduous woodland with small areas of heathland.

5.8 A review of UK Air Pollution Information System (APIS)[43] data identified nitrogen deposition for woodland habitat and for stag beetles within this SAC to be at a minimum of 29.5 kg N/ha/yr and a maximum of 59.9 kg N/ha/yr. This currently exceeds the critical loads for Fagus woodland and broadleaved deciduous woodland, which each have a critical load of 10-20 kg N/ha/yr.

5.9 Nitrogen deposition at the heath habitats is a minimum of 17 kg N/ha/yr and maximum of 32.7 kg N/ha/yr, which exceeds the critical loads for Northern wet heath and dry heaths, which each have a critical load of 10-20 kg N/ha/yr.

5.10 An increase in residential and employment sites in Hertsmere has potential to result in an increase in traffic along roads passing Epping Forest, particularly the M25 and A110, either alone or in combination with other Plans and projects. The following policies may result in increases in traffic on these roads:

5.11 Policies that set the overall quantum of development:

- Policy H1 - The supply of new homes;
- Policy E1 - Scale and distribution of Employment Land; and

5.12 Policies that set out where that development will be located:

- Policy H3 - Affordable Housing on rural or entry-level exception sites;
- Policy H8 - Redevelopment and loss of residential units;
- Policy H10 – Housing land;
- Policy E2 - Ensuring suitable provision of employment land;
- Policy E4 - South Mimms Motorway Services Area - Special Policy Area;
- Policy E5 - Elstree Aerodrome - Special Policy Area;
- Policy E6 - Media Quarter Borehamwood - Special Policy Area; and
- Policy E9 - Securing mixed-use development.

5.13 Any of the allocated sites could contribute traffic to roads passing Epping Forest, although this is more likely for allocated sites in the eastern side of Hertsmere. Census data on commuting patterns indicates that there are few trips between Hertsmere (e.g. Potters Bar or Borehamwood) towards the east; the direction of Epping Forest SAC, although there is currently no traffic modelling for Hertsmere District available to demonstrate this.

5.14 Epping Forest District Council (EFDC), in partnership with Natural England, has recently published an interim air pollution mitigation strategy[44] to address the effects of traffic on Epping Forest SAC. The main purpose of this document is to provide a strategic approach to mitigating the effects of development on the integrity of the SAC in relation to air pollution. This document sets out a suite of mitigation measures (including a potential Clean Air Zone around the SAC) that will be implemented and is an important part of the evidence base that supports EFDC's Local Plan. Waltham Forest council is also preparing an Air Pollution Mitigation Strategy, which is not yet publicly available.

5.15 EFDC mitigation strategy takes into consideration the impacts from increased air pollution as a result of *"proposed housing and employment growth within and outwith the District for the period to 2033"*, although traffic arising in Epping Forest district is considered to be the main contributor. The HRA of the EFDC Plan concludes from traffic and air quality modelling that:

> *"… growth in Epping Forest District between 2014 and 2033 is the primary source of additional ammonia and NOx emissions on the modelled road sections and all other plans and projects make a negligible contribution to the in-combination effect."*

5.16 It is therefore considered unlikely that increased traffic associated with the Hertsmere Local Plan will have an adverse effect on the integrity of Epping Forest SAC, alone or in combination with other plans and projects. However, given the sensitivity of the SAC and the evolving approaches to mitigation, is considered that traffic modelling data will be necessary to demonstrate that proposed new development in Hertsmere will not significantly increased traffic on roads

[41] Natural England (2016) Epping Forest Site Improvement Plan http://publications.naturalengland.org.uk/publication/6663446854631424
[42] Magic (2021) SSSI Unit condition
[43] APIS (2021) Air Pollution information System, http://www.apis.ac.uk/
[44] https://www.eppingforestdc.gov.uk/planning-and-building/planning-policy/statement-on-the-adoption-of-the-interim-air-pollution-mitigation-strategy/

passing within 200m of the SAC. The following proposed approach is something that requires further discussion with Natural England at the next stage of the HRA.

5.17 To fully understand the potential impacts of the Local Plan on the SAC, it is recommended that road traffic AADT figures associated with planned growth in Hertsmere are modelled for the M25 and A110, in the first instance, as these are the roads linking Hertsmere to Epping Forest and are likely to represent the 'worst case' in terms of traffic from Hertsmere passing within 200m of the SAC. This data will be used to determine whether thresholds are exceeded in-combination with other plans and projects as a result of the Local Plan. If thresholds are exceeded on these roads, additional modelling of other roads leading from these may be required to determine the extent of potential significant effects.

5.18 Where figures exceed the threshold of 1000 AADT for daily traffic flows or 200 AADT for HDV, an air quality assessment would be required to understand whether the plan will result in an adverse effect on integrity (AEoI) and whether avoidance and mitigation measures can be applied which would prevent AEoI.

5.19 The Local Plan includes a number of policies that could help to reduce traffic and associated air pollution impacts:

- *Policy ENV1 – Environmental impact of development*: states that development should not "significantly add to contamination or pollution" and that "development proposals will be judged against the principles below and any future Contaminated Land, Air Quality or Noise and Vibration SPD."
- *Policy ST2 - Hertsmere's transport network and supporting infrastructure*: requires strategic site allocations to contribute to measures such as improved public transport, walking and cycling.
- *Policy ST3 - Reducing emissions and promoting health and wellbeing*: requires all developments to demonstrate that measures have been taken to reduce air pollution and improve access for cycling and walking.
- *Policy ST5 - Electric vehicles and mobility initiatives*: requires all new homes with their own curtilage and all major retail/commercial developments to have car charging provision, and for all major trip generating proposals to provide space for car clubs.
- *Policy E5 - Elstree Aerodrome - Special Policy Area*: states that proposals will not be permitted if they exacerbate existing traffic or environmental conditions; and that proposals will be supported where they reduce emissions and improve air quality.

5.20 The potential for these measures to reduce air pollution impacts and the requirement for further mitigation will be considered once traffic data has been obtained and (if necessary) air quality assessment carried out. The required scope of further assessment is set out in **Chapter 6** Conclusions and Next Steps.

5.21 It is not possible to conclude whether there will be adverse effects on the integrity of Epping Forest SAC due to air pollution, at this stage. Further information will be required to complete the assessment in the next iteration of the HRA.

Lee Valley SPA/Ramsar

5.22 Lee Valley SPA's bitterns (qualifying species) are identified in the Site Improvement Plan as being sensitive to atmospheric nitrogen deposition.

5.23 Lee Valley SPA/Ramsar lies within 200m of the A503 and A1055 (Walthamstow Reservoirs SSSI); and the A414 (Rye Meads SSSI). Both of these portions of the SPA/Ramsar are some distance away from Hertsmere (12km and 14km respectively, in a straight line; longer on roads) around 30-60 minutes' drive[45] from Hertsmere (depending on traffic), and not on a direct route from the borough.

5.24 At Rye Meads SSSI, the habitat within 200m of the road is coastal and floodplain grazing marsh and semi-improved grassland; at Walthamstow Reservoirs SSSI the habitats are open water[46]. The relevant SSSI units at Walthamstow Reservoirs SSSI is in unfavourable recovering condition due to site management. At Rye Meads SSSI, the SSSI unit is in unfavourable recovering condition due to species numbers but the open water habitat is considered to be favourable. Air pollution is not cited as a factor in the condition of either.

5.25 In relation to bitterns, APIS provides critical loads and nitrogen deposition data for rich fens, which support the qualifying bird species, but this habitat is not present within 200m of the A503, A1055 or A414. Critical loads are not provided for open water, although nitrogen deposition for this habitat is 10.2-14.2 kg N/ha/yr. Open water is generally considered less sensitive to nitrogen than other habitats.

5.26 Due to the distance of the SPA/Ramsar from Hertsmere and the sensitivity of the habitats within 200m of the road, it is considered that there are not likely to be adverse effects on integrity due to air pollution associated with the Local Plan, either alone or in combination with other plans or projects.

5.27 Significant effects are unlikely and there will be no adverse effects on the integrity of Lee Valley SPA/Ramsar as a result of air pollution associated with the Local Plan.

[45] Google Maps

[46] Defra (2021) Magic Map priority habitat dataset

Wormley Hoddesdonpark Woods SAC

5.28 Wormley Hoddesdonpark Woods SAC's oak-hornbeam forest (qualifying habitat) is identified on the Site Improvement Plan[47] as being sensitive to atmospheric nitrogen deposition.

5.29 Wormley Hoddesdonpark Woods SAC lies within 200m of the A10, which provides one of the routes north from Hertsmere (via the M25). All of the habitat within 200m of the road is deciduous (broadleaved) woodland and the underlying SSSI unit is in favourable condition.

5.30 A review of APIS data identified nitrogen deposition for woodland habitat within this SAC to be at a minimum of 26.9 kg N/ha/yr and a maximum of 32.7 kg N/ha/yr. This currently exceeds the critical loads for broadleaved, mixed and yew woodland, which has a critical load of 15-20 kg N/ha/yr.

5.31 An increase in residential and employment sites in Hertsmere has potential to result in an increase in traffic along the A10. The following policies may result in increases in traffic on these roads:

5.32 Policies that set the overall quantum of development:

- Policy H1- The supply of new homes;
- Policy E1 - Scale and distribution of Employment Land; and

5.33 Policies that set out where that development will be located:

- Policy H3 - Affordable Housing on rural or entry-level exception sites;
- Policy H8 - Redevelopment and loss of residential units;
- Policy H10 – Housing land;
- Policy E2 - Ensuring suitable provision of employment land;
- Policy E4 - South Mimms Motorway Services Area - Special Policy Area;
- Policy E5 - Elstree Aerodrome - Special Policy Area;
- Policy E6 - Media Quarter Borehamwood - Special Policy Area; and
- Policy E9 - Securing mixed-use development.

5.34 Any of the allocated sites could contribute traffic to roads passing Worley Hoddesdonpark Woods SAC, although this is more likely for allocated sites in the eastern side of Hertsmere.

5.35 As with Epping Forest, road traffic AADT figures associated with planned growth in Hertsmere are required to determine whether air quality assessment is required. AADT will be required for the A10, where it passes within 200m of the SAC, although data on commuting[48] from the 2011 census suggests that most traffic on the A10 does not arise from trips to/from Hertsmere.

5.36 The same policies within the Local Plan provide potential mitigation (paragraph 5.19).

5.37 It is not possible to conclude whether there will be adverse effects on the integrity of Wormley Hoddesdonpark Woods SAC due to air pollution, at this stage. Further information will be required to complete the assessment in the next iteration of the HRA.

Recreation pressure

Epping Forest SAC

5.38 Recreation pressure is an issue at Epping Forest SAC, with the Site Improvement Plan stating *"Epping Forest is subject to high recreational pressure. There is a high general level of footfall in Epping Forest throughout the year, including periods of significant use, and resulting in a diverse range of impacts which include mountain biking and unmanaged fires.";* and Epping Forest District Council have prepared an interim mitigation strategy[49] to manage visitor pressure at the site.

5.39 Visitor surveys[50] at Epping Forest SAC found that the majority (75%) of visitors travel to the SAC from within 6.2km, and Hertsmere lies well beyond this distance. An updated visitor strategy is being used to inform a recreational pressure mitigation strategy for the SAC[51], but the interim strategy only requires contributions to mitigation from developments within 3km of the SAC.

5.40 Recreation pressure effects at Epping Forest SAC from the Hertsmere Local Plan are therefore unlikely and there will be no adverse effects on the integrity of the SAC as a result of recreation pressure.

[47] Natural England (2015) Wormley Hoddesdonpark Woods SAC Site Improvement Plan, http://publications.naturalengland.org.uk/publication/6314181103976448
[48] UCL (2021) Datashine commute, https://commute.datashine.org.uk/
[49] Epping Forest District Council (2018) Interim Approach to Managing Recreational Pressures on the Epping Forest Special Area of Conservation, https://www.eppingforestdc.gov.uk/wp-content/uploads/2021/02/Interim-Mitigation-Strategy-for-Epping-Forest-Special-Area-of-Conservation.pdf
[50] Epping Forest Visitor Survey 2017: https://www.footprint-ecology.co.uk/reports/Liley%20et%20al.%20-%202018%20-%20Epping%20Forest%20Visitor%20Survey%202017.pdf
[51] Epping Forest District Council; the current position in relation to recreation pressure: https://www.eppingforestdc.gov.uk/planning-and-building/planning-policy/epping-forest-special-area-of-conservation-sac/

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Lee Valley SPA/Ramsar

5.41 The Site Improvement Plan identifies public access and disturbance as an issue at Lee Valley SPA/Ramsar, citing water sports, angling and dog walking as examples.

5.42 There are no visitor surveys for the Lee Valley SPA/Ramsar that provide information to estimate the site's ZOI. However, Natural England's Monitoring Engagement with the Natural Environment (MENE)[52] survey shows that 75% of visitors to rivers, lakes and canals in Hertfordshire travel less than 5 miles (8km). The distance over which recreation pressure will significantly increase is likely to be less than this. Studies at other sites, such as the Thames Basin Heaths SPA[53] have used a 7km ZOI.

5.43 Lee Valley SPA/Ramsar is 10km from Hertsmere at its nearest.

5.44 Recreation pressure effects at Lee Valley SPA/Ramsar from the Hertsmere Local Plan are therefore unlikely; therefore there will be no adverse effects on the integrity of the site.

Wormley Hoddesdonpark Woods SAC

5.45 The Site Improvement Plan for the SAC states that:

> *"The site is a large, attractive area of ancient woodland with extensive public access and close to large urban centres, so it is heavily used by the public for recreational purposes. 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. However, visitor numbers continue to increase, the types of use can change unpredictably and less obvious adverse effects on important flora and fauna could be missed during routine, 'general purpose' monitoring.";* and
>
> *"Illegal use of restricted byways and bridleways by off-road vehicles causes localised but sometimes severe rutting and soil compaction, damaging the woodland ground flora, shrubs and trees. Fly-tipping damages the ground flora directly and can introduce toxins and alien species."*

5.46 Although it appears that visitors are well managed at the site, and there is little publicly available information about recreation pressure at the site, which suggests it may not currently be a significant issue, there may still be the potential for impacts from increases in population associated with the Hertsmere Local Plan.

5.47 As with Lee Valley SPA/Ramsar, there is no visitor survey data for Wormley Hoddesdonpark Woods SAC to determine the ZOI. However, Natural England's Monitoring Engagement with the Natural Environment (MENE)[54] survey shows that 75% of visitors to woodlands and forest in Hertfordshire travel less than 5 miles (8km). The distance over which recreation pressure will significantly increase is likely to be less than this; however, if 8km was used as a very precautionary ZOI, this would include Potters Bar and any new development around it. The residential site allocations within 8km of Wormley Hoddesdonpark Woods SAC are:

- Potters Bar Golf Course (HEL251; 500 homes);
- Land to rear of 28-30 Manor Road (HEL375; 40 homes);
- Land west of Potters Bar station (HEL216; 40 homes);
- Former Sunnybank Primary School site (HEL318; 80 homes);
- Wrotham Park, west Barnet Road (HEL362; 900 homes);
- Land south of Barnet Road (HEL162; 20 homes); and
- Dove Lane (HEL177; 170 homes).

5.48 The policies that could result in residential development within 8km of Wormley Hoddesdonpark Woods SAC (ie around Potters Bar) are:

- Policy H1- The supply of new homes;
- Policy H3 - Affordable Housing on rural or entry-level exception sites;
- Policy H8 - Redevelopment and loss of residential units; and
- Policy H10 – Housing land.

5.49 The Local Plan includes a number of policies that could help to reduce recreation pressure impacts by requiring development to provide alternative accessible semi-natural greenspace, and through general protection of designated sites:

- Policy LF4 - Open space and recreation facilities standards for new development: requires residential development to provide on-site open space, with standards set according to the projected population of the site e.g. 0.4ha of natural and semi natural open

[52] Natural England (2020) Monitoring Engagement with the Natural Environment, MENE Visit data Year 1 to 10 filtered by county, habitat and distance travelled, http://publications.naturalengland.org.uk/publication/4897139222380544
[53] Thames Basin Heaths Joint Strategic Partnership Board, (2009), Thames Basin Heaths Special Protection Area Delivery Framework.
[54] Natural England (2020) Monitoring Engagement with the Natural Environment, MENE Visit data Year 1 to 10 filtered by county, habitat and distance travelled, http://publications.naturalengland.org.uk/publication/4897139222380544

space required on site for 200 homes. Where provision cannot be met onsite, contributions to off-site provision are required.

- Policy ENV8 – Green and blue infrastructure: encourages developments to maximise opportunities to enhance the green and blue infrastructure network,
- Policy ENV4 – Sites of biodiversity value: provides general protection for nationally designated sites. As SSSIs underly European sites, this policy may provide general protection for SAC, SPA or Ramsar sites.

5.50 Recreation pressure impacts at Wormley Hoddesdonpark Woods SAC were screened with a precautionary ZOI. Policy LP4, along with the other mitigating policies, is considered sufficient to remove the residual risk of adverse effects at the SAC.

5.51 No adverse effects on the integrity of Wormley Hoddesdonpark Woods SAC are anticipated as a result of the Local Plan.

Water quantity

5.52 It was not possible to rule out likely significant effects due to changes in water quantity at the screening stage, due to potential effects associated with water supply and proposed infrastructure upgrades set out in the Affinity Water WRMP. Although the HRA of the WRMP concluded that there would be no adverse effects on European sites (South West London Waterbodies SPA/Ramsar, Cothill Fen SAC, Hackpen Hill SAC, Little Wittenham SAC and Oxford Meadows SAC); the reliance on old Local Plan housing provision figures for the in combination assessment means that is possible that new development planned in Hertsmere could exceed that taken into account in the WRMP HRA.

5.53 Water companies have to operate within the regulatory framework established through a number of Acts of Parliament (such as the Water Act, Environment Act and Flood and Water Management Act) as well regulations which transposed relevant EU Directives (such as the Water Framework, Urban Wastewater Treatment and Drinking Water Directives). They therefore are legally required to provide water supply (and treatment) for new development, even if that means expanding existing capacity. Affinity Water will therefore be required to meet the water supply needs of development allocated within the Local Plan, although they will be limited by permitting requirements for abstraction, which help to avoid adverse effects on integrity of European sites and which the Environment Agency regulates.

5.54 The Local Plan has a number of policies that require development to minimise water consumption and demonstrate that there is sufficient (water supply) infrastructure capacity to support the development:

- Policy SG2 - Resilience against Climate Change: sets out principles for climate change resilience, including "*reducing water consumption including through greater water re-use and recycling, with residential and commercial development demonstrating the capability to achieve sustainable levels of water consumption over the lifetime of the proposals*."
- Policy SG5 – Infrastructure provision and supporting growth: requires that development: "*demonstrate, at the planning application stage, that adequate infrastructure capacity can be provided (both on-site and off-site) to… meet the needs arising from the development, without placing an unacceptable additional burden on existing infrastructure*."
- Policy CC1 - Climate change and sustainability principles: requires larger developments to demonstrate how they will achieve a maximum potable water usage of 110 litres/person/day.
- Policy ENV11 - Sustainable drainage systems, grey water recycling and water management: requires all development to comply with a water efficiency standard of 110 litres/person/day.

5.55 Policy SG4 – Infrastructure delivery and monitoring strategy also states that the council will "*review overall capacity in infrastructure and services through annual updates of the IDP and monitor the collection and expenditure of developer contributions*".

5.56 Combined with the requirement for Affinity Water to supply water to the region while remaining within permitting limits (and avoiding adverse effects on European site), the mitigation contained with Local Plan Policies is considered sufficient to be able to conclude **no adverse effects on the integrity of South West London Waterbodies SPA/Ramsar, Cothill Fen SAC, Hackpen Hill SAC, Little Wittenham SAC and Oxford Meadows SAC, due to changes in water quantity.**

Summary of Appropriate Assessment

5.57 The conclusions of the Appropriate Assessment are summarised in **Table 5.1**:

- The European sites that are shown as screened out (grey) indicate sites that were screened out due to lack of impact pathway/sensitive qualifying features or assessed and concluded to have no Likely Significant Effect at the screening stage.
- The European sites highlighted (green) as having no adverse effect on integrity were found to have no adverse effect on integrity due to confirmed mitigation already included in the Local Plan.

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- For the remaining European sites, the potential for adverse effects on integrity from the Local Plan in relation to these sites is uncertain (orange) until further assessment is carried out.

Table 5.1: Summary of Appropriate Assessment

European Sites	Air Pollution	Recreational Pressure	Water Quantity
Epping Forest SAC	Uncertain	No adverse effects on integrity	Screened out
Lee Valley SPA/Ramsar	No adverse effects on integrity	No adverse effects on integrity	Screened out
Wormley Hoddesdonpark Woods SAC	Uncertain	No adverse effects on integrity	Screened out
South West London Waterbodies SPA/Ramsar	Screened out	Screened out	No adverse effects on integrity
Cothill Fen SAC	Screened out	Screened out	No adverse effects on integrity
Hackpen Hill SAC	Screened out	Screened out	No adverse effects on integrity
Little Wittenham SAC	Screened out	Screened out	No adverse effects on integrity
Oxford Meadows SAC	Screened out	Screened out	No adverse effects on integrity

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Chapter 6
Conclusions and Next Steps

Summary of assessment and conclusions

6.1 The HRA Screening in **Chapter 4** concluded that the following policies and all site allocations currently identified in the Local Plan could have a likely significant effect on European sites, alone or in combination with other plans or projects:

- Policy H1- The supply of new homes;
- Policy H3 - Affordable Housing on rural or entry-level exception sites;
- Policy H8 - Redevelopment and loss of residential units;
- Policy H10 – Housing land;
- Policy E1 - Scale and distribution of employment land;
- Policy E2 - Ensuring suitable provision of employment land;
- Policy E4 - South Mimms Motorway Services Area - Special Policy Area;
- Policy E5 - Elstree Aerodrome - Special Policy Area;
- Policy E6 - Media Quarter Borehamwood - Special Policy Area; and
- Policy E9 - Securing mixed-use development.

6.2 The findings of the HRA screening determined that impacts from air pollution, recreation pressure and pressure on water resources could result in a likely significant effect in relation to the following European sites:

- **Air pollution –** in relation to Epping Forest SAC, Lee Valley SPA/Ramsar and Wormley Hoddesdonpark Woods SAC;
- **Recreation** – in relation to Epping Forest SAC, Lee Valley SPA/Ramsar and Wormley Hoddesdonpark Woods SAC; and
- **Water quantity** – in-combination in relation to South West London Waterbodies SPA/Ramsar, Cothill Fen SAC, Hackpen Hill SAC, Little Wittenham SAC and Oxford Meadows SAC.

6.3 The Appropriate Assessment in **Chapter 5** considered whether the above likely significant effects will, in light of mitigation and avoidance measures, result in adverse effects

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on integrity of the European sites either alone or in-combination with other plans or projects. The findings of the Appropriate Assessment are summarised below.

Air pollution

6.4 Due to the distance of Lee Valley SPA/Ramsar from Hertsmere and the sensitivity of the habitats within 200m of the road, it was possible to rule out adverse effects on integrity at this site.

6.5 Epping Forest SAC's heathland and forest (qualifying habitats) and Wormley Hoddesdonpark Woods SAC's oak-hornbeam forest (qualifying habitat) are sensitive to atmospheric nitrogen deposition from vehicle emissions, and critical loads are being exceeded at both sites. Although Wormley Hoddesdonpark Woods SAC is in favourable condition despite the existing nitrogen deposition, much of Epping Forest SAC is in unfavourable condition due to air pollution. A number of roads potentially contribute to this.

6.6 An increase in residential and employment sites in Hertsmere has potential to result in an increase in traffic along roads passing Epping Forest or Wormley Hoddesdonpark Woods SAC, either alone or in combination with other plans and projects.

6.7 Traffic modelling is required to understand the contribution of traffic from Hertsmere Local Plan to the following roads:

- Epping Forest SAC: M25 and A110; and
- Wormley Hoddesdonpark Woods SAC: A10.

6.8 For Epping Forest SAC, this approach is precautionary as, based on work undertaken for Epping Forest District Council, Hertsmere is unlikely to contribute significantly to air pollution on roads passing the SAC, but it is considered necessary for a robust assessment to provide traffic forecast data to support this assumption.

6.9 If these figures exceed the threshold of 1000 AADT for daily traffic flows or 200 AADT for HDV (alone or in combination) then an air quality assessment will be required to understand whether the plan will result in an adverse effect on integrity (AEoI) and whether avoidance and mitigation measures can be applied which would prevent AEoI. The requirements for this are outlined in 'Next Steps', below.

6.10 Once this assessment has been completed, the requirement for mitigation can be considered.

6.11 At this stage, it has not been possible to rule out adverse effects on the integrity of Epping Forest SAC or Wormley Hoddesdonpark Woods SAC as a result of the Local Plan. Further work will be required to assess this in an updated HRA, prior to the Local Plan Regulation 19 consultation.

Recreation pressure

6.12 Visitor surveys at Epping Forest SAC found that the majority (75%) of visitors travel to the SAC from within 6.2km, and Hertsmere lies well beyond this distance. 75% of visitors to rivers, lakes and canals in Hertfordshire travel less than 5 miles (8km) and Lee Valley SPA/Ramsar is 10km from Hertsmere at its nearest. It was possible to rule out adverse effects on the integrity of both of these sites.

6.13 The impact of recreation pressure at Wormley Hoddesdonpark Woods SAC was screened in using a precautionary zone of influence (ZOI). No visitor survey data is available to determine a site-specific ZOI, and the Site Improvement Plan for the SAC identifies visitor pressure as being currently well managed, but potentially an issue if visitor numbers increase.

6.14 The Local Plan provides mitigation within policies LP4 and ENV8 that require residential developments to provide new open space and enhance green infrastructure. These are considered sufficient to mitigate the potential risk of recreation pressure at Wormley Hoddesdonpark Woods SAC, either alone or in combination with other plans or projects.

6.15 It has therefore been possible to conclude that the Local Plan will not result in adverse effects on the integrity of Wormley Hoddesdonpark Woods SAC.

Water quantity

6.16 Water quantity impacts were screened in as a precaution because of potential in-combination effects identified within the WRMP on South West London Waterbodies SPA/Ramsar, Cothill Fen SAC, Hackpen Hill SAC, Little Wittenham SAC and Oxford Meadows SAC: and reliance on old Local Plan housing figures for the in combination assessment, although the assessment concluded no adverse effects on the integrity of those sites.

6.17 Water companies have to operate within the regulatory framework and are legally required to provide water supply for new development without exceeding permitting requirements for abstraction (which help to avoid adverse effects on integrity of European sites).

6.18 The Local Plan policies SG2, SG4, SG5, CC1, ENV11 require development to minimise water consumption and demonstrate that there is sufficient (water supply) infrastructure capacity to support the development

6.19 Combined with the requirement for Affinity Water to supply water to the region while remaining within permitting

limits, the mitigation contained with Local Plan Policies is considered sufficient.

6.20 It has therefore been possible to conclude that the Local Plan will not result in adverse effects on the integrity of South West London Waterbodies SPA/Ramsar, Cothill Fen SAC, Hackpen Hill SAC, Little Wittenham SAC and Oxford Meadows SAC.

Next steps

6.21 This HRA report will be published alongside the Draft Local Plan, for consultation (Regulation 18) with statutory consultees, including Natural England. HRA is an iterative process and the report will be updated following the consultation to reflect any consultation responses, discussions with consultees, and changes to the Local Plan.

6.22 Prior to the next consultation on the Local Plan (Regulation 19), the HRA will need to have concluded the assessment of air pollution effects at Epping Forest SAC and Wormley Hoddesdonpark Woods SAC; and any required mitigation should be committed to and embedded within the Local Plan (and must be prior to adoption of the Local Plan).

6.23 To assess the effects of the Local Plan alone and in combination with other plans and projects, traffic flows (AADT) will ideally be required to be modelled for the following scenarios:

1. A baseline year (2021);
2. Future baseline year (2038), which takes into account background growth and 'reasonably foreseeable' and committed developments in Hertsmere and authorities neighbouring the European sites; and
3. Future baseline plus the Local Plan.

6.24 The authorities to include in the future baseline year will need to be agreed in consultation with Natural England and the transport consultant, based on those most likely to contribute traffic to the same roads as Hertsmere, but could include:

- Wormley Hoddesdonpark Woods SAC - authorities alongside the M25 and A10: East Hertfordshire, Broxbourne, Welwyn Hatfield and Enfield; and
- Epping Forest SAC – authorities alongside the M25 and A110: Epping Forest, Enfield, Barnet, Welwyn Hatfield, Broxbourne, Waltham Forest and Redbridge.

6.25 Information on development proposed within these authorities' development plans is provided in **Appendix B**.

6.26 If the traffic modelling shows that flows will exceed the threshold of 1000 AADT for daily traffic flows or 200 AADT for HDV, an air quality assessment will be required to understand whether the plan will result in an adverse effect on integrity (AEoI) and whether avoidance and mitigation measures can be applied which would prevent AEoI.

6.27 The air quality assessment and updated HRA will be completed with reference to the following guidance documents:

- 'Natural England's approach to advising competent authorities on the assessment of roads traffic emissions under the Habitats Regulations'[55];
- The Institute of Air Quality Management's 'A guide to the assessment of air quality impacts on designated nature conservation sites[56]'; and
- CIEEM's 'Advisory Note: Ecological Assessment of Air Quality Impacts[57]'.

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[55] Natural England (2018) Natural England's approach to advising competent authorities on the assessment of roads traffic emissions under the Habitats Regulations, http://publications.naturalengland.org.uk/publication/4720542048845824

[56] IAQM (2020) A guide to the assessment of air quality impacts on designated nature conservation sites (May 2020), https://iaqm.co.uk/text/guidance/air-quality-impacts-on-nature-sites-2020.pdf

[57] CIEEM (2021) Advisory Note: Ecological Assessment of Air Quality Impacts, https://cieem.net/wp-content/uploads/2020/12/Air-Quality-advice-note.pdf

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Appendix A

Attributes of European Sites screened into the HRA

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Site name and area (ha)	Location	Qualifying features	Threats and pressures	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
Wormley Hoddesdon park Woods SAC (336.47 ha)	Fragmented sites to the north east of the Hertsmere boundary, all lying within the 15km buffer boundary.	Annex I Habitats (which are a primary reason for the selection of this site): Sub-Atlantic and medio – European oak, or oak-hornbeam forests of the *Carpionion betuli.*	Threats and pressures[58] on this site include the following: ■ Disease ■ Invasive species ■ Air Pollution: risk of atmospheric nitrogen deposition ■ Deer ■ Vehicles: illicit ■ Forestry and woodland management ■ Public access / disturbance Disease - Acute Oak Decline (AOD) is present in at least two parts of the site and affects both native oak species, which are key components of this woodland type. Invasive species - Several tree and shrub species not native to the site are present. Where they are not being actively controlled, they are gradually spreading. The more invasive of these include sycamore, turkey oak, rhododendron and snowberry. Air Pollution: risk of atmospheric nitrogen deposition - Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site. Deer – Browsing and grazing by deer can reduce tree regeneration and damage the woodland understorey and ground flora. Deer damage levels are currently only moderate and do not appear to be affecting tree regeneration, habitat structure or species composition greatly. Vehicles: illicit - Illegal use of restricted byways and bridleways by off-road vehicles causes localised but sometimes severe rutting and soil compaction, damaging the woodland ground flora, shrubs and trees. Fly-tipping damages the ground flora directly and can introduce toxins and alien species.	The supplementary advice on conserving and restoring site features[60] makes it clear that the qualifying habitat can be affected by change of habitat and soil disturbance/compaction adjacent to the site. Light grazing and browsing by sheep and deer helps promote a diverse woodland structure but heavy browsing can prevent woodland regeneration. The supplementary advice identifies the following non qualifying habitats/features that the qualifying features depend on: Vegetation community composition - maintaining or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature. Vegetation Structure – open space (for woodland pasture with old trees) - having some open, sunlit and largely tree-less areas as part of the woodland community is often important to facilitate natural tree and shrub regeneration and also to provide supporting habitat for specialist woodland invertebrates, birds, vascular and lower plants. Vegetation structure – dead wood – for this habitat type, old or over-mature elements of the woodland are particularly characteristic and important features. The vegetation community composition is as follows: The largest part of the site is oak-bracken-bramble woodland, dominated by sessile oak *Quercus petraea* and hornbeam *Carpinus betulus*, with areas of pedunculate oak *Quercus robur* and hornbeam. Further there are large stands of almost pure hornbeam (former coppice). There are also marshy areas with alder *Alnus glutinosa*, pendulous sedge *Carex pendula* and yellow pimpernel *Lysimachia nemorum* as well as areas with higher proportions of ash Fraxinus excelsior, Dogs Mercury *Mercurialis perennis* and Yellow Archangel *Lamium galeobdolon* on the chalky boulder clay. Areas dominated by bluebell *Hyacinthoides non-scripta* do occur, but elsewhere there are stands of great wood-rush

[58] Site Improvement Plan: Wormley Hoddensdonpark Woods, Natural England, April 2015. Available at: http://publications.naturalengland.org.uk/publication/6314181103976448?category=35016.
[60] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Wormley Hoddesdonpark Woods Special Area of Conservation (SAC). Natural England, January 2019. Available at: http://publications.naturalengland.org.uk/publication/4919819195383808.

Site name and area (ha)	Location	Qualifying features	Threats and pressures	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
			Forestry and woodland management - The larger woodland units with public access are under appropriate management but some of the smaller, privately-owned units are not which can result in a reduction in structural and species diversity (particularly in previously coppiced areas), the loss of temporary and permanent open space, the over-shading and deterioration of veteran pollards, and the spread of invasive species. Public Access/Disturbance – As the site is a large, attractive area of ancient woodland with extensive public access and close to large urban centres, it is heavily used by the public for recreational purposes. In addition to the above, the supplementary advice[59] identifies the following vulnerabilities: Vegetation community composition - maintaining or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature. Vegetation Structure – open space (for woodland pasture with old trees) - having some open, sunlit and largely tree-less areas as part of the woodland community is often important to facilitate natural tree and shrub regeneration and also to provide supporting habitat for specialist woodland invertebrates, birds, vascular and lower plants. Currently, the areas of open space within the wood-pasture areas are insufficient to meet the desired target. Vegetation structure – dead wood – for this habitat type, old or over-mature elements of the woodland are particularly characteristic and important features, and their continuity should be a priority. Root zones of ancient trees - unless carefully managed, activities such as construction, forestry management and trampling by grazing livestock and human feet during recreational activity may all contribute to excessive soil compaction around ancient trees.	*Luzula sylvatica* with carpets of the mosses *Dicranum majus* and *Leucobryum glaucum*. Locally, a bryophyte community more typical of continental Europe occurs, including the mosses *Dicranum montanum*, *D. flagellare* and *D. tauricum*.
Epping Forest SAC	Fragmented sites lying to the south east of the	Annex 1 Habitats (which are a primary reason for the	Threats and pressures[61] on this site include the following:	Stag beetles require decaying wood of broadleaved trees for larvae to feed, although not of a particular tree species. The supplementary

[59] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Wormley Hoddesdonpark Woods Special Area of Conservation (SAC). Natural England, January 2019. Available at: http://publications.naturalengland.org.uk/publication/4919819195383808.
[61] Site Improvement Plan: Epping Forest, Natural England, December 2016. Available at: http://publications.naturalengland.org.uk/publication/6663446854631424?category=35016.

Site name and area (ha)	Location	Qualifying features	Threats and pressures	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
(1,630.74 ha)	Hertsmere boundary. The SAC is partially within the 15km buffer boundary, however, extends outwith this buffer.	selection of this site): Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrublayer (*Quercion robori-petraeae* or *Ilici-Fagenion*). Annex 1 Habitats (which are present as a qualifying feature but not a primary reason for the selection of this site): European dry heaths North Atlantic wet heaths with *Erica tetralix* (wet heathland with cross-leaved heath). Annex II species (that are a primary reason for the selection of this site): Stag beetle *Lucanus cervus*	■ Air pollution: impact of atmospheric nitrogen deposition ■ Undergrazing ■ Public access / disturbance ■ Changes in species distributions ■ Inappropriate water levels ■ Water pollution ■ Invasive species ■ Disease ■ Invasive species Air Pollution: impact of atmospheric nitrogen deposition - Nitrogen deposition exceeds site-relevant critical loads for ecosystem protection. Some parts of the site are assessed as in unfavourable condition for reasons linked to air pollution impacts. Undergrazing - The quality and diversity of the SAC features requires targeted management best achieved through grazing to: minimise scrub invasion; minimise robust grass domination, and maximise the species diversity of heathland plant communities. Public Access / Disturbance - Epping Forest is subject to high recreational pressure. Changes in species distributions - Beech tree health and recruitment may not be coping sufficiently with environmental conditions to sustain its presence and representation within the SAC feature. This may be linked to climate change as well as other factors such as air quality, recreational pressure and water availability. Inappropriate water levels - Wet heath is dependent on suitable ground water	advice on conserving and restoring site features[63] states that off-site trees in local gardens, parks and along the roadside may be important in helping to maintain the local stag beetle population if decaying timber is present and may help to 'connect' the SAC population with neighbouring colonies. The supplementary advice also states: The qualifying habitat comprises beech Fagus sylvatica forests with holly *Ilex aquifolium*, growing on acid soils, in a humid Atlantic climate. Sites of this habitat type often are, or were, managed as wood-pasture systems, in which pollarding of beech *Fagus* sylvatica and oak *Quercus* spp. was common. Wet heath usually occurs on acidic, nutrient-poor substrates, such as shallow peats or sandy soils with impeded drainage. European dry heaths typically occur on freely-draining, acidic to circumneutral soils with generally low nutrient content. Nearly all dry heath is seminatural, being derived from woodland through a long history of grazing and burning. Most dry heaths are managed as extensive grazing for livestock. Some plant or animal species (or related groups of such species) make a particularly important contribution to the necessary structure, function and/or quality of qualifying habitats. For wet heath, this includes: *Calluna vulgaris*, *Erica cinerea, E. tetralix, Salix repens, Ulex minor, Vaccinium spp. Carex panicea, C. pulicaris, Dactylorrhiza maculata, Eleocharis spp., Eriophorum angustifolium, Juncus acutiflorus, J. articulatus, Molinia caerulea, Anagallis tenella, Drosera spp., Galium saxatile, Genista anglica, Polygala serpyllifolia, Potentilla erecta, Succisa pratensis. Pedicularis sylvatica.* For dry heath, this includes: *Calluna vulgaris, Erica cinerea, E. tetralix, Ulex minor, Vaccinium spp Genista anglica, Agrostis spp., Carex spp., Danthonia decumbens, Deschampsia flexuosa, Festuca spp., Molinia caerulea, Nardus stricta, Galium saxatile, Hypochaeris radicata, Lotus corniculatus, Pedicularis sylvatica, Plantago lanceolata, Polygala spp. Potentilla erecta, Rumex acetosella, Succisa*

[63] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Epping Forest (SAC). Natural England, January 2019. Available at: http://publications.naturalengland.org.uk/publication/5908284745711616.

Site name and area (ha)	Location	Qualifying features	Threats and pressures	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
			levels. There is a threat of prolonged drying out through climate change. Water pollution - Surface run-off of poor quality water from roads with elevated levels of pollutants, nutrients and salinity may be affecting wet heath, probably mostly around the edges. Invasive species - Heather beetle has locally impacted on some heathland areas. Grey squirrel is not currently known to be significantly affecting tree health or regeneration but this will need to be monitored. Disease - Tree diseases such as Phytopthora present a real threat to Beech. In addition to the above, the supplementary advice[62] identifies the following vulnerabilities: Adaptation and resilience of the feature – the vulnerability of Epping Forest SAC to climate change has been assessed by Natural England as being Medium taking into account the sensitivity, fragmentation, topography and management of its habitats. Functional connectivity with wider landscape- The heathland resource is extensive in county terms but is fragmented, mainly by closed tree canopy habitat and roads. It is therefore vulnerable to encroachment, boundary effects, pollution, recreational impact and hydrological changes. Vegetation structure - Variations in the structure of the heathland vegetation (vegetation height, amount of canopy closure, and patch structure) is needed to maintain high niche diversity and hence high species richness of characteristic heathland plants and animals. There is currently low cover (<25%) of dwarf shrubs present for the feature and less than 15% of scrub and tree cover. Soils - the soils of the wet heath habitat are vulnerable to, and have been exposed to acidification, nutrient enrichment and pollution due to their fragmentation and proximity to roads and urban/residential development. Illumination - Epping Forest is fragmented by roads and largely surrounded by urban development and residential areas. Opportunities should be sought to minimise and reduce light pollution from existing development and any	*pratensis, Scilla verna, Serratula tinctoria, Teucrium scorodonia Thymus praecox, Viola riviniana,* There are many plants and animals which use or co-exist with non-native trees, but many rare and threatened woodland species are specialists adapted to one or a few native trees or shrub species (birches, willows and oaks, are examples of trees that host many specialist insect species). At this SAC, site-native species of tree and shrub include those typical of the H9120 type including Beech *Fagus sylvatica*, Oak *Quercus robur* and *Quercus petraea*, Holly *Ilex aquifolium*, Bramble *Rubus fruticosus* agg. Honeysuckle *Lonicera periclymenum*, Hornbeam *Carpinus betulus*, Silver birch *Betula pendula*, Downy birch *Betula pubescens*, Yew *Taxus baccata*, Elder *Sambucus nigra*, Goat willow *Salix caprea* and Wild Cherry *Prunus avium*. In addition to this, the characteristic mosaics and transitions of ancient forests and wood-pasture-types are well-represented within the site and are necessary for the conservation of SAC features and site integrity. Key species of ground flora, epiphytic bryophytes, mosses, liverworts and lichens are also listed.

[62] European Site Conservation Objectives: Supplementary advice on conserving and restoring site features Epping Forest (SAC). Natural England, January 2019. Available at: http://publications.naturalengland.org.uk/publication/5908284745711616.

Site name and area (ha)	Location	Qualifying features	Threats and pressures	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
			development plans or projects to ensure SAC features and significant biodiversity assets are safeguarded.	
Lee Valley SPA & Ramsar (447.87 ha)	Fragmented sites lying to the east, north east and south east of the Hertsmere boundary. Three areas of the SPA & Ramsar site are within the 15km buffer boundary, while there is a further area just outside the buffer.	***SPA:*** <u>Annex 1 species (non – breeding):</u> Great bittern *Botaurus stellaris* <u>Annex 1 (migratory species, non - breeding):</u> Northern shoveler *Anas clypeata* Gadwall *Anas strepera* <u>Non Qualifying Species of Interest:</u> Cormorant *Phalacrocorax carbo* Great Crested Grebe *Podiceps cristatus* Tufted Duck *Aythya fuligula* Pochard *Aythya ferina*	Threats and pressures[64] on this site include the following: ■ Water pollution ■ Hydrological changes ■ Public access / disturbance ■ Inappropriate scrub control ■ Fisheries: Fish stocking ■ Invasive species ■ Inappropriate cutting / mowing ■ Air pollution: risk of atmospheric nitrogen deposition Water Pollution - The vegetation and invertebrates provide food for the ducks, while fish provide food for the bitterns; and the habitat mosaic needs to vary from clear open water with abundant aquatic vegetation to moderately eutrophic conditions. Changes in water quality need to be managed to prevent loss of suitable habitat and food sources. Hydrological changes - Reservoir levels linked to operational requirements and all water bodies subject to natural fluctuations accounting for abstraction and climatic change. Public Access/Disturbance - Areas of the SPA are subject to a range of recreational pressures including watersports, angling and dog walking. This has the potential to affect SPA populations directly or indirectly. Inappropriate scrub control - The reedbed habitats, muddy fringes, and bankside all provide habitat as part of the mosaic for the SPA birds. Scrub control is necessary to ensure these habitats are maintained.	The information below is drawn from the supplementary advice on conserving and restoring site features[67]. **Great bittern** ■ Standing open water and canals - bittern rely on the presence and continuity of open water habitat. Changes in water area, and associated marginal habitat, can adversely affect the suitability of supporting open water habitat. ■ Reedbeds. ■ Open terrain – bittern favour large areas of open terrain, largely free of obstructions, in and around its nesting, roosting and feeding areas. Often there is a need to maintain an unobstructed line of sight within nesting, feeding or roosting habitat to detect approaching predators, or to ensure visibility of displaying behaviour. ■ Key prey species include eel, rudd, roach, frogs, toads and invertebrates. The majority of bittern are found in the Turnford and Cheshunt Pits site while Amwell Quarry and Rye Meads also support the species. Walthamstow Reservoirs also occasionally supports bittern. **Gadwall** ■ Standing open water - gadwall favour gravel pits and reservoirs during the winter period where they feed on seeds, leaves and stems of water plants. ■ Preferred food plants – sweet-grass (*Glyceria fluitans*), creeping bent (*Arostis stolonifera*), stoneworts (*Chara*), pondweeds

[64] Site Improvement Plan: Lee Valley, Natural England, December 2014. Available at: http://publications.naturalengland.org.uk/publication/5864999960444928?category=23039.
[67] European Site Conservation Objectives: Supplementary Advice on Conserving and Restoring Site Features Lee Valley Special Protection Area (SPA). Natural England, February, 2018. Available at: http://publications.naturalengland.org.uk/publication/5670650798669824.

Site name and area (ha)	Location	Qualifying features	Threats and pressures	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
		Grey Heron *Ardea cinereal* ***Ramsar:*** The site supports the nationally scarce plant species whorled watermilfoil *Myriophyllum verticillatum* and the rare or vulnerable invertebrate *Micronecta minutissima* (a waterboatman). Over winter the area regularly supports: Gadwell, *Anas strepera* – 456 individuals, representing an average of 1.5% of the population Shoveler, *Anas clypeata* – 406 individuals, representing an average of 1% of the population	Fisheries: Fish stocking - Fish population and species composition needs to be appropriate to ensure suitable habitats including food resource and water quality are maintained for SPA bird species. Invasive species - Azolla and/or invasive aquatic blanket weeds will adversely affect aquatic habitat (food sources). Inappropriate cutting/mowing - The reedbed requires rotational management for bittern. Air Pollution: risk of atmospheric nitrogen deposition - Nitrogen deposition exceeds site relevant critical loads. The Information Sheet on Ramsar Wetlands[65] also notes the whole site supports high levels of visitor pressure; principally for purposes of angling, walking, cycling and birdwatching; with boating on the adjacent canal. These activities are mostly well regulated and at current levels are not considered to threaten the interest of the Ramsar site (although they may reduce the potential for enhancing the interest). In addition to the above, the supplementary advice[66] identifies the following vulnerabilities: Conservation measures - Active and ongoing conservation management is often needed to protect, maintain or restore Botaurus stellaris Great bittern (non-breeding) at this site. Vegetation characteristics - Many bird species will have specific requirements that conservation measures will aim to maintain, for others such requirements will be less clear. Activities that may directly or indirectly affect the vegetation of supporting habitats and modify these characteristics may adversely affect the feature. Connectivity with supporting habitats - Bitterns clearly move between sites within the Lee Valley and to do this they will need to move safely to and from supporting habitat between individual waterbodies and above/across land outside the SPA. Also, the ability of Northern Shoveler to safely and successfully move to and from	(*Potomageton, Ceratophyllum* spp., *Ruppia, Elodeo nuttallii*). Each of the supporting SSSIs support gadwall in numbers which are sufficient to qualify them as being of national importance. **Northern shoveler** ■ Standing open water - in winter, shoveler frequent shallow water areas on marshes, flooded pasture, reservoirs and lakes with plentiful, marginal reeds or emergent vegetation and are found throughout. ■ Preferred food plants – *Scirpus, Eleocharis, Carex, Potaogeton, Glyceria.* Shoveler also feed on zooplankton (e.g. *Hydrobia*, crustaceans, caddisflies, *Diptera*, beetles) in the shallow margins of waterbodies. Preferred food plants are linked with early successional stages of waterbodies, therefore succession, particularly tree cover, can lead to the loss of suitable foraging habitat. BTO Bird Facts The British Trust for Ornithology[68] records the site's qualifying bird species' diets as: ■ Bittern: mostly fish, amphibians, insects but wide variety; ■ Shoveler: omnivorous (incl. insects, crustaceans, molluscs, seeds); and ■ Gadwall: leaves and shoots.

[65] Information Sheet on Ramsar Wetlands (RIS) UK11034: Lee Valley. JNCC, September 2000. Available at: https://jncc.gov.uk/our-work/ramsar-sites/.
[66] European Site Conservation Objectives: Supplementary Advice on Conserving and Restoring Site Features Lee Valley Special Protection Area (SPA). Natural England, February, 2018. Available at: http://publications.naturalengland.org.uk/publication/5670650798669824.
[68] https://www.bto.org/understanding-birds/birdfacts

Site name and area (ha)	Location	Qualifying features	Threats and pressures	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
			feeding and roosting areas is critical to their adult fitness and survival. Water depth - As the birds will rely on detecting their prey within the water to hunt, the depth of water at critical times of year may be paramount for successful feeding and therefore their fitness and survival. Population abundance – the population of Northern Shoveler within Lee Valley SPA has shown a slight decrease since Classification. The key SPA sites at Amwell and Turnford & Cheshunt Pits experienced a population decline during the 1999/00 – 2008/09 period, along with the functionally linked non- SPA Holyfield gravel pits. The SPA Walthamstow reservoirs and non-SPA Chingford reservoirs show population trends that appear to be related to water levels and available food resource. Food availability within supporting habitat - the availability of an abundant food supply is critically important for successful breeding, adult fitness and survival and the overall sustainability of the population. As a result, inappropriate management and direct or indirect impacts which may affect the distribution, abundance and availability of prey may adversely affect the population.	The Information Sheet on Ramsar Wetlands[69] also notes the ecological features of the site include open water, with associated wetland habitats including reedbeds, fen grassland and woodland which support a number of wetland plant and animal species including internationally important numbers of wintering wildfowl.
South West London Waterbodies SPA (825.1 ha)	A cluster of waterbodies c.20-27km south west of Hertsmere, but connected along the River Colne.	*Anas clypeata* northern shoveler *Anas strepera* gadwall	*Natura 2000 Standard Data Form* ■ Invasive non-native species ■ Abiotic (slow) natural processes ■ Changes in biotic conditions ■ Outdoor sports and leisure activities, recreational activities ■ Marine and Freshwater Aquaculture *Natural England site improvement plan* Public Access/Disturbance - Most of the sites have some level of formal or informal public access, including water-based activities on some waterbodies (angling, sailing, waterskiing). People can potentially disturb wintering Gadwall and Shoveler, and management for recreational uses may reduce the area of suitable habitat. Low numbers of Gadwall and Shoveler are associated with higher levels of disturbance.	*Natural England: supplementary advice on conserving and restoring site features* Gadwall favour shallow water bodies which are naturally eutrophic (nutrient-rich) with low levels of human disturbance, and tend to utilise lakes with an 'open' landscape character i.e. low levels of dense fringing vegetation of scrub or reed-beds. The Gadwall is a 'dabbling' duck feeding primarily on aquatic vegetation, including macrophytes and filamentous algae. Invertebrates may also be eaten as a minor part of the diet. They frequently demonstrate a degree of 'kleptoparasitic' behaviour in that they will feed on aquatic and semi-aquatic plants ('macrophytes') brought to the surface by other duck species and more usually coot. Water quality and chemistry are therefore important aspects in habitat suitability as factors such as high levels of turbidity or siltation may render sites or parts of sites unsuitable if macrophyte beds are affected. Like Gadwall, Shoveler favour similar types of inland waterbodies such as lakes and reservoirs with extensive shallows including beds of silt and

[69] Information Sheet on Ramsar Wetlands (RIS) UK11034: Lee Valley. JNCC, September 2000. Available at: https://jncc.gov.uk/our-work/ramsar-sites/.

Site name and area (ha)	Location	Qualifying features	Threats and pressures	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
			Changes in species distributions - Gadwall numbers have been in decline on this SPA (-51% over 10 years up to 2009/10), which is not consistent with upwards national population trend. It is not yet confirmed that the changes in Gadwall and Shoveler numbers at the SPA is indicative of changing species distribution or of changing population size. Invasive species - Large areas of wetland and terrestrial habitat are infested with *Crassula helmsii* and this is likely to be reducing invertebrate numbers - Gadwall and Shoveler feed on invertebrates. Natural changes to site conditions - The inevitable maturation of gravel pits is altering roosting and feeding provision in terms of bankside vegetation, water chemistry and aquatic biodiversity. Fisheries: Fish stocking - Stocking of fish for recreation angling negatively impacts upon SPA bird populations. Fish de-stocking has been carried out in the past. Carp is particularly problematic. Inappropriate weed control - Control or removal of waterweed for watersports potentially impacts upon the availability of food for Gadwall and Shoveler. Invasive species - There are concerns that Egyptian geese are showing significant increases. Impacts on gadwall and shoveler not yet confirmed or quantified but there is potential that geese are competing with Gadwall and Shoveler for habitat and food. *Natural England: supplementary advice on conserving and restoring site features* In addition to the above, the supplementary advice identifies the following vulnerabilities: Supporting habitat function: water quality/quantity - Poor water quality may significantly reduce habitat quality by reducing the health of macrophyte beds and hence availability of plant food. Supporting habitat function: conservation measures - Active and ongoing conservation management is often needed to protect, maintain or restore habitat	submerged macrophytes. Like Gadwall they favour waterbodies with shallow margins/areas and where at least parts have an open, tree-less landscape character. They feed by filtering invertebrates and zooplankton from surface and shallow water, and from the lake bed/silt using their broad bill. They typically feed in areas with beds of macrophytes at shallow depth as these areas are often particularly rich in invertebrate food. A much larger proportion of their diet is made up by invertebrates and so is higher in calorific value than the predominantly plant food taken by Gadwall. Plant matter may also make a very minor part of Shoveler diet. Supporting habitat function: water quality/quantity - Poor water quality may significantly reduce habitat quality by reducing the health of macrophyte beds and hence availability of plant food. Supporting habitat function: conservation measures - Active and ongoing conservation management is often needed to protect, maintain or restore habitat suitability for Gadwall, particularly the favoured terrestrial habitats such as grassland and rush pasture, including bankside/shore habitat. Food availability - Inappropriate management and direct or indirect impacts which may affect the distribution, abundance and availability of prey may adversely affect the population. It is important that areas of high quality food supply are maintained in areas of low disturbance, with suitable surrounding habitat conditions for Shoveler i.e. areas of shallow water which are unshaded or only lightly shaded, and an absence of extensive beds of tall emergent vegetation such as reed-beds. *BTO Bird Facts*[70] The site's qualifying bird species' diets are: ■ Shoveler: omnivorous (incl. insects, crustaceans, molluscs, seeds); and ■ Gadwall: leaves and shoots.

[70] https://www.bto.org/about-birds/birdfacts

Site name and area (ha)	Location	Qualifying features	Threats and pressures	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
			suitability for Gadwall, particularly the favoured terrestrial habitats such as grassland and rush pasture, including bankside/shore habitat. Food availability - Inappropriate management and direct or indirect impacts which may affect the distribution, abundance and availability of prey may adversely affect the population. It is important that areas of high quality food supply are maintained in areas of low disturbance, with suitable surrounding habitat conditions for Shoveler i.e. areas of shallow water which are unshaded or only lightly shaded, and an absence of extensive beds of tall emergent vegetation such as reed-beds. Extensive cover of floating plants such as water-lilies is also undesirable. Air pollution - the structure and function of habitats which support gadwall may be sensitive to changes in air quality. Exceeding critical values for air pollutants may result in changes to the chemical status of water bodies, accelerating or damaging plant growth, altering vegetation structure and composition and thereby affecting the quality and availability of feeding or roosting habitat.	
South West London Waterbodies Ramsar site (same area as the SPA)	(same as the SPA)	Information Sheet on Ramsar Wetlands *Anas clypeata* northern shoveler – 397 individuals, representing an average of 2.6% of the GB population *Anas strepera* gadwall – 487 individuals, representing an average of 2.8% of the GB population	*Information Sheet on Ramsar Wetlands:* Potential future decommissioning of reservoirs once they are no longer required for the purposes of water supply, as well as the potential impacts of maintenance works which may require winter draw-down of reservoirs. The threat from potential development pressures in this urbanised and urban-fringe area is largely covered by the relevant provisions of the Conservation Regulations (1994). Levels of disturbance from recreational activities are an issue on one part of the site.	As for the SPA, with additional information on habitats and species at the site: Open water, plus associated wetland habitats including grassland and woodland supporting a number of wetland plant and animal species including internationally important numbers of wintering wildfowl. ■ Great crested grebe, *podiceps cristatus* ■ Great cormorant, *Phalacrocorax carbo* ■ Tufted duck, *Aythya fuligula* ■ Black-necked grebe, *Podiceps nigricollis* ■ Smew, *Mergellus albellus*
Cothill Fen SAC	Located between the Berkshire	Alkaline fens	*Site Improvement Plan*[71]*: Cothill Fen*	Alkaline Fens- This habitat relies on calcium-rich, waterlogged soils which generally support a varied assemblage of mosses and floral species. These conditions have been achieved due to hydrological

[71] Natural England (2014) Site Improvement Plan: Cothill Fen. Available at: http://publications.naturalengland.org.uk/category/6149691318206464

Site name and area (ha)	Location	Qualifying features	Threats and pressures	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
	Downs and the River Thames in Oxfordshire and around 80km to the west of Hertsmere.	Alluvial forests with *Alnus glutinosa* and *Franxinus excelsior* (*Alno-Padion, Alnion Incanae, Salicion albae*)	Water Pollution- Water samples from streams, ponds and ditches at Parsonage Moor and Cothill National Nature Reserve (NNR) show high nitrate levels. Hydrological Changes- There is concern that fen areas of Cothill Fen SAC may be becoming drier, and that this may be affecting populations of rare fen plants and invertebrates. Air Pollution- Modelled nitrogen deposition exceeds site relevant critical load for the rich calcareous fen feature. Excess reed growth in unit 2 (Parsonage Moor & Cothill Fen NNR), which supports southern damselfly, could potentially be related to atmospheric nitrogen deposition.	changes within the site's unique geology. The SAC contains one of the largest surviving examples of alkaline fen in the UK, and has been managed through moderate mowing or grazing with arisings removed to prevent nutrient enrichment, peat digging and creation of ponds. The SAC supports black bog-rush – blunt flowered rush Schoenus nigricans – Juncus subnodulosus, bottle sedge Carex rostrata¸ grass-of-Parnassus Parnassia palustris, common butterwort Pinguicula vulgaris and marsh helleborine Epipactis palustris. Alluvial forests- The alkaline fens have transitioned into wet alder *Alnus glutinosa* woodland which are characteristically found within floodplains. They often then transition further into dry woodlands. Alluvial forests typically support a varied community assemblage given the transitional conditions, comprising tall herb, reed and sedge species to marshy and lo-growing species. This habitat has become fragmented within the UK due to riverine woodland clearances.
Hackpen Hill SAC	An extensive area of chalk grassland situated in south Oxfordshire between Newbury and Swindon. Hackpen Hill SAC is located around 107km to the south west of Hertsmere.	Semi-natural dry grasslands and scrubland facies: on calcaereous substrates *(Festuco-Bromtalia)* *Gentianella anglica:* Early gentian	There are no issues affecting the site.	*The Conservation Objectives Supplementary Advice*[72] states that the following are key structural, influential and/or distinctive species (along with Early gentian, which is a qualifying feature): ■ *Bromus erectus grassland* (main component of the H6210 feature within the SAC) ■ Vascular plant assemblage including *Chalk milkwort Polygala calcarea;* Frog orchid *Coeloglossum viride;* Henbane Hyoscyamus *niger;* Slender bedstraw *Galium pumilum* ■ Lepidoptera populations including Chalkhill blue *Polyommatus coridon*; Brown argus *Aricia agestis*; Dingy skipper *Erynnis tages* and chalk carpet *Scotopteryx bipunctaria* Changes in surrounding land-use may adversely (directly/indirectly) affect the functioning of the feature and its component species. In this case, the maintenance of a consistent grazing regime is of critical importance. This is dependent upon the availability of additional grazing land and stock handling facilities in close proximity to the grassland feature.

[72] Natural England (2019) The Conservation Objectives Supplementary Advice: Hackpen Hill. Available at: http://publications.naturalengland.org.uk/category/6528471664689152

Site name and area (ha)	Location	Qualifying features	Threats and pressures	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
Little Wittenham SAC	Little Wittenham SAC is situated in the North Wessex Downs Area of Outstanding Natural Beauty in Oxfordshire. The site is around 60km to the west of Hertsmere.	*Triturus cristatus*: Great crested newt	*Site Improvement Plan: Little Wittenham*[73] Invasive Non Native- Predation by fish inappropriately released into the ponds by members of the public, is seriously reducing the population of Great Crested Newts. The fish need to be completely eliminated. Public Access/ Disturbance- There is an expected increase in visitor pressure with the expansion of nearby towns and villages.	It is acknowledged that it is difficult to define an appropriate extent of supporting habitat for great crested newt meta-populations. However, a guiding principle should be to seek to ensure that there is no reduction in the overall extent of breeding pond and terrestrial habitat in the core area supporting the local meta-population. *The Conservation Objectives Supplementary Advice*[74] states that the following habitats must be maintained and/or restored to support the great crested newt meta-population: ■ Great crested newts lay their eggs on submerged water plants, showing a preference for plants with curled leaves which offer a degree of protection from predation, such as pondweed Elodea spp, flote grass Glyceria fluitans, brooklime Veronica beccabunga and water forget-me-not Myosotis scorpioides. ■ The presence of other submerged and floating plants can be important in providing cover and protection from predation. Ideally, ponds should have a balance between submerged, emergent, floating and marginal plants, as ponds with a diversity of aquatic vegetation types and structures will generally support a higher biodiversity. ■ Soil supports basic ecosystem function and is a vital part of the natural environment. Its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms. ■ A wide range of semi-natural habitats are utilised by newts including meadows, tussocky grassland, scrub, woodland, as well as 'brownfield' land or low-intensity farmland. Good quality terrestrial habitat for great crested newt has structural diversity which can be provided by features such as hedges, ditches, stone walls, old farm buildings, loose stone/rocks, rabbit burrows and small mammal holes.

[73] Natural England (2014) Site Improvement Plan: Little Wittenham. Available at: http://publications.naturalengland.org.uk/category/6149691318206464
[74] Natural England (2019) The Conservation Objectives Supplementary Advice: Little Wittenham. Available at: http://publications.naturalengland.org.uk/category/6528471664689152

Site name and area (ha)	Location	Qualifying features	Threats and pressures	Non-qualifying habitats and species upon which the qualifying habitats and/or species depend
Oxford Meadows SAC	The Oxford Meadows Special Area for Conservation is situated on the broad floodplain of the River Thames to the west and north-west of Oxford. The site around 68km to the north west of Hertsmere.	Lowland hay meadows *(Alopecurus pratensis, Sanguisorba officinalis)* *Apium repens*: Creeping marshwort	*Site Improvement Plan: Oxford Meadows*[75] Hydrological changes- A survey in August 2014 indicated that the *Apium repens* population in Port Meadow has significantly declined in size. It is considered that this change may be associated directly or indirectly with hydrological changes possibly deeper, more prolonged and frequent flood episodes. Adjustment of the water level management is proposed as a means to help mitigate for these changes. Invasive species- The interest features for Oxford Meadows SAC are MG4 grassland and *Apium repens*. The *Apium repens* only occurs on Port Meadow SSSI. The concern is that Crassula will spread to the lower areas on Port Meadow where the *Apium repens* occurs and that it will swamp it out. Pollution to groundwater- point sources and diffuse sources.	Lowland hay meadows- The habitat is maintained through annually cutting for hay, with light aftermath grazing, seasonal flooding maintains an input of nutrients. Therefore, conservation measures for this feature will typically include grazing, cutting, scrub management, weed control, recreation/visitor management. Along with the maintenance of surface drainage features such as grips, gutters and foot drains, and retention of suitable land use infrastructure/patterns to enable site management e.g. pastoral livestock farming. Creeping marshwort Apium repens- This species relies on damp and sparsely vegetated grasslands which are nutrient-rich and susceptible to winter flooding. This species requires periodic disturbance which can be achieved through cattle grazing or the seasonal flooding. This is to reduce competition for light as this species is a low-growing clonal perennial.

[75] Natural England (2014) Site Improvement Plan: Oxford Meadows. Available at: http://publications.naturalengland.org.uk/category/6149691318206464

Appendix B

Review of potential for in-combination effects with other local authority plans

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Local Plans for authorities that may contribute traffic to the M25, A10 or A110
Welwyn Hatfield Local Plan[76]: Submission version (August 2016) (submitted for Examination May 2017) *The Welwyn Hatfield Local Plan is currently under independent examination.*
Welwyn Hatfield Borough lies directly to the north east of Hertsmere and includes a small area of Wormley – Hoddesdonpark Woods SAC on the eastern periphery of the District. Housing The provision of 12,000 new homes will be built on a range of sites between 2013 and 2032. Two thirds of these will be within and adjoining Welwyn Garden City and Hatfield. In addition a new village settlement of 1,100 dwellings will be created as an exemplar of sustainable best practice, while more limited development will take place within and around villages. A planned release of a limited amount of land from the Green Belt will take place to meet the need for 6,200 dwellings which cannot be provided for within the existing towns and villages. Employment Land Provision A total of 294.1ha of employment land has been identified to maintain a sufficient supply of jobs in the borough and provide the opportunity for new employment floorspace to be provided between 2013-2032. The Local Plan supports the delivery of at least 116,400sqm of new floor space for industry, offices and warehouses between 2013 and 2032. To meet predicted expenditure growth in the borough, 12,500sqm of new retail floorspace will be made available by 2026. This will provide for a range of 15,960 to 17,900 total new jobs over the plan period. Eleven employment areas are designated within the Local Plan.
Enfield Core Strategy (2010-2025)[77] *Note that the Council is in the process of preparing a new Local Plan (A New Plan for Enfield 2018-2036). The latest stage was a consultation on a Regulation 18 Draft Plan, which was carried out in Summer 2021.*
The London Borough of Enfield lies to the east of Hertsmere. It does not include any European sites within, or adjacent to, its boundaries. Housing Between 2010 and 2030 (beyond current Core Strategy time frame) approximately 13,000 new dwellings are planned. Housing growth will be concentrated in areas of the Borough where it can be most readily accommodated and planned through the intensification of land uses, the promotion of mixed uses and the managed release of surplus industrial land. New residential development will be provided in the following areas: Upper Lee Valley (Meridian in Central Leeside will accommodate up to 5,000 new dwellings, and Ponders End up to 1,000). North Circular area, and new Southgate will accommodate up to 2,000 new dwellings. Enfield's town centres (including an area around Enfield Town Station), will accommodate up to 500 new dwellings. Other large sites borough wide will accommodate up to 1,030 new dwellings. Other small sites will accommodate up to 3,950 new dwellings. Employment Land Provision Between 2006 and 2026 provision has been made for a minimum of 6,000 new jobs. Emphasis will be on increasing the number and diversity of jobs within the Borough and strengthening the local economic base, while areas of underused land will be brought back into productive use to support the creation of new communities and economic regeneration. Provisions made include the following: Approximately 4,000 new jobs will be created in the Upper Lee Valley area by 2026. Approximately 2,000 new jobs will be created in other town centres and place shaping priority areas (Meridian Water, Ponders End, New Southgate and the area around Enfield Town Rail Station). Up to 10,000sqm of new retail floor space will be provided in an area around Enfield Town Station.

[76] Local Plan Proposed Submission, (August 2016), Welwyn Hatfield Borough Council <http://consult.welhat.gov.uk/portal/planning_policy/local_plan_proposed_submission_august_2016/>
[77] Core Strategy, Enfield Council (adopted November 2010) <https://new.enfield.gov.uk/services/planning/planning-policy/local-plan/planning-policy-information-enfield-core-strategy.pdf>

Local Plans for authorities that may contribute traffic to the M25, A10 or A110
Barnet Local Plan Core Strategy[78] *Note that a Local Plan review is underway. The Regulation 19 draft Local Plan was subject to consultation in Summer 2021.*
The London Borough of Barnet lies directly to the south of Hertsmere. It does not include any European sites within, or adjacent to, its boundaries. Housing The Local Plan sets out the following housing objectives: to promote the development of the major regeneration and development areas, priority estates and town centres in order to provide in the range of 20,000 new homes (contributing to a borough total of 28,000 new homes) by 2026 to meet local and regional housing needs. to regenerate the priority housing estates at Dollis Valley, Grahame Park, Granville Road Stonegrove – Spur Road and West Hendon to replace 3,000 existing homes with a greater range of accommodation that provides access to affordable and decent new homes.
East Hertfordshire District Council Local Plan 2018[79]
East Hertfordshire District lies to the north east of Hertsmere, and is partially within the 15km buffer. Fragmented sections of Lee Valley SPA & Ramsar are located within the south of the District. Sections of Wormley - Hoddesdonpark Woods SAC are also located within the District, to the south west. Housing Over the period of 2011-2033 a minimum of 18,458 new homes will be delivered. The distribution of housing seeks to prioritise development in the following locations: ■ Sustainable brownfield sites. ■ Sites within the urban areas of Bishop's Stortford, Buntingford, Hertford, Sawbridgeworth and Ware. ■ Urban extensions to Bishop's Stortford, Hertford, Sawbridgeworth and Ware, and to the east of Stevenage, east of Welwyn Garden City and in the Gilston Area. ■ Limited development in the villages. Employment Land Provision The aim is to achieve a minimum of 10,800 new jobs up to 2033. This will include making provision for 19 to 20ha of new employment land for B1/B2/B8 uses.
Epping Forest District Draft Local Plan[80] (submission version 2017) *Note this version of the Local Plan was submitted for consultation in September 2018 and the Council is now working on a set of proposed modifications.*
Epping Forest District lies to the east of Hertsmere and contains fragmented areas of Epping Forest SAC to the south west. In addition an area of Lee Valley SPA & Ramsar site lies on the western boundary partially within Epping Forest District and partially within Broxbourne District. Housing Provision is made for a minimum of 11,400 new homes from 2011-2033. Around 3,900 of these homes will be provided through the creation of Garden Town Communities around Harlow. Over 1,000 homes will be provided at each of Epping, Loughton and North Weald Basset, with remaining growth provided at other settlements. Employment Land Provision The plan allocates 23ha of new employment land.

[78] Local Plan – Core Strategy DPD, Barnet London Borough Council (adopted September 2012) < https://www.barnet.gov.uk/citizen-home/planning-conservation-and-building-control/planning-policies-and-further-information/Adopted-Local-Plan---Core-Strategy-DPD.html>
[79] https://cdn-eastherts.onwebcurl.com/s3fs-public/documents/District_Plan_Publish_web_view.pdf
[80] Epping Forest District Local Plan (submission version 2017) https://www.efdclocalplan.org/wp-content/uploads/2018/03/EB114-Epping-Forest-District-Local-Plan-Submission-Version-2017.pdf

Local Plans for authorities that may contribute traffic to the M25, A10 or A110
Broxbourne Local Plan 2018-2033: A Framework For The Future Development Of The Borough[81] *The Broxbourne Local Plan 2018-2033 was adopted in June 2020 and replaces the Local Plan 2005.*
Broxbourne Borough lies to the east of Hertsmere, and is partially within the 15km buffer. Fragmented sections of Lee Valley SPA & Ramsar lie on the eastern boundary, with other areas located to the north west. Sections of Wormley – Hoddesdon park Woods SAC are also located within the Borough, to the north and west. <u>Housing</u> Provision will be made for at least 7,718 homes in the period 2016-2033, including at the following strategic development locations: Cheshunt Lakeside – 1,750 homes Waltham Cross town centre – redevelopment of lands at the north end of the High Street The remainder of homes to be provided at smaller sites <u>Employment Land Provision</u> Provision will be made for in excess of 6,500 net additional jobs, focusing on the following key employment locations: Brookfield. Park Plaza . Cheshunt Lakeside. Town centres.
Redbridge Local Plan 2015-2030[82] (adopted March 2018)
The London Borough of Redbridge lies to the south east of Hertsmere. Although the majority of the borough is outside the 15km buffer, it contains fragmented areas of Epping Forest SAC. <u>Housing</u> The Local Plan makes provision for delivering a minimum of 16,845 new homes across the borough through the creation of high quality developments in a phased programme to help meet existing and future housing needs. In addition the Local Plan aims to ensure diversity in the type, size and tenure of housing, including affordable housing to meet local needs. New dwellings will be distributed in the following areas: Illford: 5,364 new dwellings Crossrail Corridor: 4,862 new dwellings Gants Hill: 502 new dwellings South Woodford: 446 new dwellings Barkingside: 508 new dwellings Rest of the borough: 2,855 <u>Employment Land Provision</u> Provision is made for the following: Illford: 3,000 new jobs and 19,000sqm of new employment floorspace Crossrail Corridor: 1,600 new jobs and 7,300sqm of new employment floorspace Gants Hill: 600 new jobs and 2,600sqm of new employment floorspace South Woodford: 600 new jobs and 6,100sqm of new employment floorspace Barkingside: 125 new jobs (no new employment floorspace specified).

[81] Broxbourne Local Plan: https://ex.broxbourne.gov.uk/sites/default/files/Documents/Planning_Policy/Pre-Submission%20Local%20Plan%20Written%20Statement%20-%20LOW%20RES%20VERSION.pdf
[82] Redbridge Local Plan 2015-2030 https://www.redbridge.gov.uk/media/4934/10-redbridgelocal-plan_070318_web-1.pdf

Local Plans for authorities that may contribute traffic to the M25, A10 or A110
Waltham Forest Local Plan: Core Strategy[83] *The Council is in the process of preparing a new Local Plan for the next 15 years. This plan is being prepared in two parts. Waltham Forest Local Plan Part 1 (Strategic Policies) – LP1 was submitted in Spring 2021 to the Secretary of State and is now undergoing independent examination. Waltham Forest Local Plan Part 2 (Site Allocations) – LP2 is being prepared for the final round of consultation (Regulation 19 stage) which is anticipated for late 2021.*
The London Borough of Waltham Forest lies to the south east of Hertsmere. Although the borough is partially outside the 15km buffer, it contains fragmented areas of Epping Forest SAC to the east and an area of Lee Valley SPA & Ramsar to the west. Housing The Council will seek to provide growth in particular areas as follows: Blackhorse Lane: up to 2500 new dwellings Northern Olympic Fringe: up to 2500 new dwellings Walthamstow Town Centre: up to 2000 new dwellings Wood Street: up to 1000 new dwellings Employment Land Provision Up to 1,000 new jobs will be provided in Blackhorse Lane.

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[83] Waltham Forest Local Plan: Core Strategy (adopted March 2012) <https://branding.walthamforest.gov.uk/Documents/adopted-core-strategy.pdf>

Appendix C

Screening matrices

C.1 The matrices below show which types of impacts on European sites could potentially result from each of the policies and site allocations in the Hertsmere Local Plan. Where a policy or site allocation is not expected to have a particular type of impact, the relevant cell is shaded green. Where a policy or site allocation could potentially have a certain type of impact, this is shown in orange. Text within policies that could contribute to mitigation, to reduce the effects of development arising from the Local Plan, is shown in grey.

C.2 The final column sets out the nature of potential significant effects if they were to arise. Where uncertain or likely significant effects are identified, these are required to be considered further via Appropriate Assessment.

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Table C.1: Screening matrix - policies

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Does the policy need to be scoped into the Appropriate Assessment?
Policy SG1 - Creating Sustainable Development	None – this policy sets out the council's commitment to sustainable development and will not result in new development.	n/a	No
Policy SG2 - Resilience against Climate Change	None – this policy sets out requirements for climate change resilience and will not result in new development.	n/a	No This policy sets out principles for climate change resilience, including "reducing water consumption including through greater water re-use and recycling, with residential and commercial development demonstrating the capability to achieve sustainable levels of water consumption over the lifetime of the proposals." This may contribute to mitigation for impacts related to water quantity.
Policy SG3 – Presumption in favour of sustainable development	None – this policy sets out the council's commitment to sustainable development and will not result in new development.	n/a	No
Policy SG4 – Infrastructure delivery and monitoring strategy	None – this policy sets out the process for infrastructure delivery and monitoring and will not result in new development.	n/a	No The policy states that the council will "review overall capacity in infrastructure and services through annual updates of the IDP and monitor the collection and expenditure of developer contributions". This may contribute to mitigation where water quantity or quality impacts relate to infrastructure capacity.
Policy SG5 – Infrastructure provision and supporting growth	None – this policy requires new development to provide appropriate infrastructure but will not itself result in new development.	n/a	No The policy requires that development: "demonstrate, at the planning application stage, that adequate infrastructure capacity can be provided (both on-site and off-site) to… meet the needs arising from the development, without placing an unacceptable additional burden on

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Does the policy need to be scoped into the Appropriate Assessment?
			existing infrastructure." This may contribute to mitigation where water quantity or quality impacts relate to infrastructure capacity.
Policy SG6 – Developer contributions	None – this policy describes how developer contributions will be used and will not result in new development.	n/a	No
Policy SG7 - Health and Wellbeing	None – this policy requires major developments to provide amenities for health and wellbeing and will not result in new development.	n/a	No This policy requires major developments to "provide enhanced access to good quality green and blue open space, with improved biodiversity within easy reach of local communities." This may contribute to mitigation for impacts relating to recreation pressure.
Policy H1- The supply of new homes at least 12,160 new dwellings within plan period	Residential development Increase in vehicle traffic Increase in recreation pressure Increase in demand for water abstraction and treatment	Increased air pollution Disturbance from recreation Change in water quantity and quality	Yes – This policy sets out the overall quantum of housing development from the Local Plan and therefore will contribute to impacts that arise from the scale of development, for example air pollution, recreation disturbance and changes in water quantity. Effects associated with development in specific locations (e.g. recreation pressure) are assessed in relation to the allocated sites and Policy H10.
Policy H2 - Affordable Housing	None – this policy sets out the need to provide affordable homes within the life of the plan and how these should come forward. It will not itself result in new development.	n/a	No
Policy H3 - Affordable Housing on rural or entry-level exception sites	Residential development Increase in vehicle traffic Increase in recreation pressure Increase in demand for water abstraction and treatment	Increased air pollution Disturbance from recreation Change in water quantity and quality	Yes – this policy allows for small scale development within rural areas, outside of the allocated sites. Although the overall quantum of Housing development will be assessed in relation to policy H1 and development arising under Policy H3 will be small in scale, the policy sets the principle of housing development outside the

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Does the policy need to be scoped into the Appropriate Assessment?
			allocated sites, which may be relevant to location-specific effects such as recreation pressure.
Policy H4 - Provision for Gypsies and Travellers at least 30 pitches within plan period, at four sites	Residential development Increase in vehicle traffic Increase in recreation pressure Increase in demand for water abstraction and treatment	Increased air pollution Disturbance from recreation Change in water quantity and quality	No – Three of the sites with proposed new pitches are within allocated sites assessed under Policy H10. The exceptions are the existing Sandy Lane, Gullimore Farm and Chapman's Yard traveller sites, where 2-4 additional pitches each are proposed within the existing site boundaries. The scale of this proposed development is such that there are not likely to be significant effects on European sites.
Policy H5 - New and extended Park Homes sites	None – this policy sets out the principles by which applications for new and extended park homes will be determined, but will not itself result in new development.	n/a	No
Policy H6 - Housing mix	None – this policy sets out desired housing mix within new development but will not itself result in new development.	n/a	No
Policy H7 - Specialist housing with support or care	None – this policy sets out requirements for specialist housing but will not itself result in new development.	n/a	No
Policy H8 - Redevelopment and loss of residential units	Residential development Increase in vehicle traffic Increase in recreation pressure Increase in demand for water abstraction and treatment	Increased air pollution Disturbance from recreation Change in water quantity and quality	Yes – this policy allows for densification of housing development within urban areas, outside of the allocated sites. Although the overall quantum of Housing development will be assessed in relation to policy H1, this policy sets the principle of housing development outside the allocated sites, which may be relevant to location-specific effects such as recreation pressure.
Policy H9 - Self build and custom-build homes	None – this policy sets out the principles for self-build and custom-build homes as part of new housing schemes but will not itself result in new residential development.	n/a	No

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Does the policy need to be scoped into the Appropriate Assessment?
Policy H10 – Housing land 14 strategic sites (BE3, BE5, BE6, B1, B2, B3, B4, PB2, PB3, R1, R3, S1, SM1, NS1) 36 smaller sites	Residential development Associated community, transport and green infrastructure Increase in vehicle traffic Increase in recreation pressure Increase in demand for water abstraction and treatment	Increased air pollution Disturbance from recreation Change in water quantity and quality	Yes – this policy identifies the locations in which housing will be permitted. Although the overall quantum of housing development will be assessed in relation to Policy H1, the distribution of those housing numbers will be assessed in relation to this policy; this is relevant to location-specific impacts such as recreation pressure.
Policy E1 - Scale and distribution of Employment Land	Employment development Increase in vehicle traffic Increase in demand for water abstraction and treatment	Increased air pollution Change in water quantity and quality	Yes – this policy allows for intensification and redevelopment of existing employment sites, which would contribute to the overall employment provision assessed under Policy E2 but permit development in additional locations (ie existing employment sites rather than allocated sites)
Policy E2 - Ensuring suitable provision of employment land at least 130,600sqm of floorspace / 27.7ha land required for new employment within the plan period 6 allocated sites	Employment development Increase in vehicle traffic Increase in demand for water abstraction and treatment	Increased air pollution Change in water quantity and quality	Yes – this policy sets the overall quantum of employment provision and identifies the locations in which employment will be permitted (at sites allocations and outside these).
Policy E3 - Land use within designated employment sites	None – this policy sets principles for the desired mix of employment uses but will not itself result in new development.	n/a	No
Policy E4 - South Mimms Motorway Services Area - Special Policy Area	Employment development Increase in vehicle traffic Increase in demand for water abstraction and treatment	Increased air pollution Change in water quantity and quality	Yes – although this policy largely safeguards the existing site for uses that are appropriate to a motorway service area, it does also allow new employment uses.
Policy E5 - Elstree Aerodrome - Special Policy Area	Development that supports or relates to aerodrome activities e.g. research, offices, maintenance facilities	Increased air pollution	Yes – the policy permits new uses at the site, which could increase trips to the site. This policy is focussed on aerodrome uses on the ground, rather than changes in the number of flights.

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Does the policy need to be scoped into the Appropriate Assessment?
	Increase in vehicle traffic		
Policy E6 - Media Quarter Borehamwood - Special Policy Area Approximately 63.1ha of employment land to be developed during the plan period	Employment development Hotel (approx. 200 rooms), school; associated transport and green infrastructure. Increase in vehicle traffic Increase in recreation pressure Increase in demand for water abstraction and treatment	Increased air pollution Recreation pressure Change in water quantity and quality	Yes – the scale of the development will contribute to changes in traffic flows and demand for water abstraction and treatment. The hotel may contribute to a slight increase in visitor numbers at nearby European sites but this is not considered likely to be significant.
Policy E7 - A flexible local economy	None – this policy sets principles for the desired mix of employment uses but will not result in new development.	n/a	No
Policy E8 - Promoting the film and television industry	None – this policy sets principles for film and television development at existing and new sites but will not result in new development.	n/a	No
Policy E9 - Securing mixed-use development c. 230 homes and c.16,000m2 employment 2 allocated sites	Residential development Employment development Increase in vehicle traffic Increase in recreation pressure Increase in demand for water abstraction and treatment	Increased air pollution Recreation pressure Change in water quantity and quality	Yes – this policy allocates development at two sites and permits development outside of these areas. Although the overall quantum of employment and housing has been assessed in relation to Policies H1 and E2, impacts associated with the location of development are assessed in relation to this policy.
Policy E10 - Providing local employment skills and opportunities	None – this policy relates to employment and training schemes and will not result in new development.	n/a	No
Policy GB1 - The Green Belt	None – this policy sets out the principles for development in the green belt but will not itself result in new development / activities.	n/a	No

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Does the policy need to be scoped into the Appropriate Assessment?
Policy GB2 - Compensatory Green Belt improvements	None – this policy sets out additional requirements for developers seeking to develop sites removed from the Green Belt but will not result in new development.	n/a	No
Policy GB3 - Key Green Belt sites	None – this policy identifies the areas of Green Belt in which development associated with other policies would be directed but will not itself result in new development.	n/a	No
Policy GB4 – Development standards in the Green Belt	None – this policy sets out additional requirements for developers seeking to develop sites in the Green Belt and will not result in new development.	n/a	No
Policy CC1 - Climate change and sustainability principles	None – this policy sets out sustainable principles that new developments must adopt and will not result in new development.	n/a	No This policy requires larger developments to demonstrate how they will achieve a maximum potable water usage of 110 litres/person/day, provide infrastructure to minimise car journeys, and provide green infrastructure. These may contribute to mitigation for water quantity, air pollution and recreation pressure impacts.
Policy CC2 - Greenhouse gas reductions	None – this policy sets out standards for carbon emission reduction that new developments must achieve and will not result in new development.	n/a	No
Policy CC3 –Energy generation	None – this policy sets out that the principle of developing energy generation systems and decentralised energy networks will be supported and will not result in new development.	n/a	No
Policy CC4 –Natural cooling	None – this policy sets out sustainable principles for cooling and will not result in new development.	n/a	No
Policy DL1 - Making effective use of land	None – this policy sets design principles for residential densities in defined zones but will not result in new development.	n/a	No

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Does the policy need to be scoped into the Appropriate Assessment?
Policy DL2 - High quality, safe and accessible development	None – this policy sets principles for design and will not result in new development.	n/a	No
Policy DL3 – Design standards for flats, maisonettes and houses in multiple occupation	None – this policy sets principles for design and will not result in new development.	n/a	No
Policy DL4 - Health Impact Assessments	None – this policy requires developers to identify health impacts of proposals and will not itself result in new development	n/a	No
Policy DL5 - Waste arisings	None - this policy requires waste management facilities within new developments but will not itself result in new development / activities.	n/a	No This policy states that "On strategic housing allocations, developers should demonstrate that adequate wastewater capacity exists on and off the site to satisfactorily serve the development, or that extra capacity can be provided in time to serve the development.". This may contribute to mitigation for water quality / quantity impacts.
Policy HE1 – Heritage assets and their setting	None – this policy protects heritage assets and will not result in new development.	n/a	No
Policy HE2 – Listed Buildings and their setting	None – this policy protects listed buildings and will not result in new development.	n/a	No
Policy HE3 – Conservation Areas and their setting	None – this policy protects conservation areas and will not result in new development.	n/a	No
Policy HE4 – Archaeology	None – this policy sets out principles for developing sites with archaeological interest and will not result in new development.	n/a	No
Policy ENV1 – Environmental impact of development	None – this policy sets out principles to minimise the impact of development on the environment and will not result in new development.	n/a	No The policy sets out various provisions that would contribute to mitigation for impacts associated with air pollution, and water quality, including:

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Does the policy need to be scoped into the Appropriate Assessment?
			■ "Development should not result in any adverse impact to public health or wellbeing, or significantly add to contamination or pollution, taking account of any mitigation and remediation measures. Development proposals will be judged against the principles below and any future Contaminated Land, Air Quality or Noise and Vibration SPD." ■ "New development shall not lead to an increase in designated AQMAs or lead to an increased frequency of failure against the National air quality objectives outside existing AQMAs." ■ "Development that would be likely to pollute an aquifer or unduly affect the water table will not be granted permission." And: "Where there may be a risk to local surface water or to groundwater, the criteria applied will be as described in the Environment Agency's publication 'Groundwater protection: Principles and practice (GP3)' (as amended)."
Policy ENV2 - Hazardous substances	None – this policy regulates hazardous substances involved in development and will not result in new development.	n/a	No
Policy ENV3 – Biodiversity Strategy	None – this policy sets principles for biodiversity improvement in new development and will not result in new development.	n/a	No
Policy ENV4 – Sites of biodiversity value	None – this policy protects designated sites and will not result in new development.	n/a	No This policy provides general protection for nationally designated sites. As SSSIs underly European sites, this policy may provide general protection for SAC, SPA or Ramsar sites.

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Does the policy need to be scoped into the Appropriate Assessment?
Policy ENV5 - Landscape character	None – this policy protects landscape character and will not result in new development.	n/a	No
Policy ENV6 – Development on agricultural land	None – this policy protects agricultural land and will not result in new development.	n/a	No
Policy ENV7 - Trees, landscape and development	None – this policy protects trees and other landscape features and will not result in new development.	n/a	No
Policy ENV8 – Green and blue infrastructure	None – this policy sets principles for how green and blue infrastructure will be protected or enhanced and will not itself result in new development.	n/a	No This policy encourages developments to maximise opportunities to enhance the green and blue infrastructure network, which could contribute to mitigation for recreation pressure effects (ie by providing alternative greenspaces)
Policy ENV9 – Groundwater source protection Zones	None – this policy protects source protection zones but and not result in new development.	n/a	No
Policy ENV10 - Flood risk and drainage	None – this policy aims to reduce flood risk and will not result in new development.	n/a	No
Policy ENV11 - Sustainable drainage systems, grey water recycling and water management	None – this policy sets out principles for sustainable drainage and will not result in new development	n/a	No This policy requires all developments of >10 homes or 1,000m2 floorspace to utilise SuDS; and all development to comply with a water efficiency standard of 110 litres/person/day. This may contribute to mitigation for water quality or quantity impacts.
Policy ENV12 – Watercourses and infrastructure	None – this policy protects watercourses and will not result in new development.	n/a	No
Policy ENV13 - Mineral consultation area	None – this policy safeguards areas for minerals extraction but will not result in new development / activities.	n/a	No

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Does the policy need to be scoped into the Appropriate Assessment?
Policy LF1 - Protecting key community facilities	None – this policy protects community facilities and will not result in new development.	n/a	No
Policy LF2– New or enhanced social and community facilities	Community development including schools Increased traffic	Air pollution	No – the scale of development associated with this policy is unlikely to result in significant increases in traffic.
Policy LF3 - Protecting open space, sport and recreation facilities	None – this policy requires new development to incorporate provision for sports and recreation but will not result in new development.	n/a	No
Policy LF4 - Open space and recreation facilities standards for new development	None – this policy sets standards for open space provision and will not result in new development.	n/a	No This policy requires residential development to provide on-site open space, with standards set according to the projected population of the site e.g. 0.4ha of natural and semi natural open space required on site for 200 homes. Where provision cannot be met onsite, contributions to off-site provision are required. This may contribute to mitigation for recreation pressure impacts.
Policy LF5 - Community access to recreation and leisure facilities	None – this policy aims to increase access to recreation facilities and will not result in new development.	n/a	No
Policy LF6 - Local Green Space	None – this policy protects Local Green space and will not result in new development.	n/a	No
Policy LF7 – Minor amenity land	None – this policy protects minor amenity land and will not result in new development.	n/a	No
Policy ST1 - Strategic approach to transport	None – this policy requires new development to take a strategic approach to transport provision but not result in new development.	n/a	No
Policy ST2 - Hertsmere's transport network and supporting infrastructure	None – this policy requires strategic allocations to support strategic transport initiatives.	n/a	No This policy requires strategic site allocations to contribute to measures such as improved public

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Does the policy need to be scoped into the Appropriate Assessment?
			transport, walking and cycling, which may contribute to mitigation for air pollution impacts.
Policy ST3 - Reducing emissions and promoting health and wellbeing	None – this policy requires provision for walking and cycling within new developments and will not result in new development.	n/a	No This policy requires all developments to demonstrate that measures have been taken to reduce air pollution and improve access for cycling and walking. This may contribute to mitigation for air pollution impacts.
Policy ST4 – The highway network and vehicular parking	None – this policy aims to manage the impacts of development on the highways and parking and will not result in new development	n/a	No
Policy ST5 - Electric vehicles and mobility initiatives	None – this policy makes provision for electric vehicle charging and car clubs and will not result in new development.	n/a	No This policy requires all new homes with their own curtilage and all major retail'/commercial developments to have car charging provision, and for all major trip generating proposals to provide space for car clubs. This may contribute to mitigation for air pollution impacts.
Policy ST6 - Aviation safeguarding	None – this policy safeguards the aerodrome but will not itself result in new development / activities.	n/a	No
Policy VTC1 - Retail and town centre strategy	None – this policy sets out the types of development that will be supported in town centres and where town centre uses will be permitted, but will not itself result in new development.	n/a	No
Policy VTC2 - Retail and local centre hierarchy	None – this policy sets out the types of development that will be supported in retail centres and where retail development will be permitted, but will not itself result in new development	n/a	No
Policy VTC3 – Town centre regeneration and Opportunity Areas	None – this policy sets out the types of development that will be supported in opportunity areas and it sets additional planning requirements	n/a	No Although this policy identifies opportunity areas and the opportunities present there, the new

Policy	Likely activities (operation) to result as a consequence of the proposal	Potential effects if proposal implemented	Does the policy need to be scoped into the Appropriate Assessment?
	and restrictions in order to prevent inappropriate development, but will not itself result in new development / activities		development (e.g. residential, employment) is assessed in the relevant overarching policies e.g. Policy H1.
Policy VTC4 - Non-commercial, business and service uses	None – this policy sets out conditions that non-employment uses must meet to be permitted in Primary Shopping Areas and Outside of Primary Shopping Areas but will not result in new development.	n/a	No
Policy VTC5 - Residential development in town centres	Residential development Increase in vehicle traffic	Air pollution Recreation pressure	No This policy permits changes of use and small scale development within town centres but the scale is such that significant effects are unlikely.
Policy VTC6 - Creating new retail centres	None – this policy sets out the types of retail development that will be supported as part of strategic housing allocations, but will not itself result in new development	n/a	No
Policy VTC7 - Primary shopping areas and edge or out of centre development	No – this policy describes appropriate mixes of development within shopping and out of town but will not itself result in new development.	n/a	No
Policy VTC8 - Core frontages	None – this policy sets out the types of development that will be supported in primary shopping areas, but will not itself result in new development	n/a	No
Policy VTC9 – Local and neighbourhood centres and individual stores	None – this policy describes appropriate mixes of development within local and neighbourhood centres but will not itself result in new development.	n/a	No
Policy VTC10 - Promoting a safe and attractive daytime and evening economy	None – this policy sets out additional planning requirements for developments to balance evening uses and measures to promote safety, and will not result in new development	n/a	No

Table C.2: Screening matrix - allocated sites

Type of impact	Screening criteria ('Development site could have a significant effect if…')	Potential development sites meeting screening criteria (sites to be considered in Appropriate Assessment)
Air pollution	Development increases traffic flows by at least 1,000 AADT or 200 HDVs AADT (alone or in combination) on the following roads: ■ Wormley Hoddesdonpark Woods SAC: A10; or ■ Epping Forest SAC: M25, A12, A104, A110, A112, A113, A114, A121, A406, A503, A1009, A1069, and A1199	Traffic modelling has not yet been undertaken; however significant contributions to traffic flows on the roads passing Epping Forest SAC and Wormley Hoddesdonpark Woods SAC are more likely to arise from sites in the east of the borough, although all development has the potential to contribute to a cumulative increase in traffic.
Recreational disturbance	Residential development proposed within 7km of: ■ Wormley Hoddesdonpark Woods SAC.	Sites within 7km of Wormley Hoddesdonpark Woods SAC: ■ Potters Bar Golf Course (HEL251); ■ Land to rear of 28030 Manor Road (HEL375); ■ Wrotham Park, west Barnet Road (HEL362); ■ Dove Lane (HEL177); and ■ Land south of Barnet Road (HEL162).