

Stanstead Abbotts & St Margaret's Neighbourhood Plan

Habitats Regulations Assessment

Stanstead Abbotts Neighbourhood Plan Group

March 2022

Quality information

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Revision History

Revision	Revision date	Details	Authorized	Name	Position
0	10/02/22	Draft for group review	JR	James Riley	Technical Director
1	25/02/22	Amendments following client comments	JR	James Riley	Technical Director

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1. Introduction

Scope of Project

- 1.1 AECOM was appointed by Locality to provide technical assistance to Stanstead Abbots Neighbourhood Plan Group to undertake a Habitats Regulations Assessment (HRA) of the Stanstead Abbots & St Margaret's (SASAM) Neighbourhood Plan (NP) 2022-2032. This is to inform the planning group and local council of the potential effects of Neighbourhood Plan (NP) development on European Sites (Special Areas of Conservation, SACs, Special Protection Areas, SPAs, and Ramsar sites designated under the Ramsar convention), and how they are being, or should be, addressed in the draft NP.
- 1.2 The SASMNP has been prepared to be in conformity with the current East Herts District Plan (October 2018) and sets out a range of policies for the Neighbourhood Plan area.
- 1.3 The plan contains policies on green spaces and the natural environment; on the community and leisure; on heritage and protection for historical features in the community; policies to encourage employment and others on transport addressing the needs of residents who have a variety of reasons to travel and importantly, housing allocations.
- 1.4 For the purpose of informing this NP HRA, policies contained within the East Herts District Plan and the most up to date District Plan HRA (AECOM, 2017) have been referred to. The District Plan HRA report including Appropriate Assessment was ultimately able to conclude no adverse effects on the integrity of European sites with changes to policy wording.
- 1.5 The objective of this HRA is to identify if any particular site allocation and/or policies proposed in the SASMNP have the potential to cause an adverse effect on the integrity of European designated sites, either in isolation or in combination with other plans and projects, and to determine whether site-specific or policy mitigation measures are required.

Legislative Context

- 1.6 The UK left the EU on 31 January 2020 under the terms set out in the European Union (Withdrawal Agreement) Act 2020 ("the Withdrawal Act"). This established a transition period, which ended on 31 December 2020. The Withdrawal Act retains the body of existing EU-derived law within our domestic law. During the transition period EU law applies to and in the UK. From 1 January 2021, the UK is no longer a member of the European Union. However, Habitats Regulations Assessment will continue as set out in the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019¹.
- 1.7 The HRA process applies the 'Precautionary Principle'² to European sites. Plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity of the European site(s) in question. Plans and projects with predicted adverse impacts on European sites may still be permitted if there are no alternatives to them and there are Imperative Reasons of Over-riding Public Interest (IROPI) as to why they should go ahead. In such cases, compensation would be necessary to ensure the overall integrity of the site network.
- 1.8 The need for Appropriate Assessment (**Box 1**) is set out in the Conservation of Habitats and Species Regulations 2017 (as amended).

¹ these don't replace the 2017 Regulations but are just another set of amendments

² The Precautionary Principle, which is referenced in Article 191 of the Treaty on the Functioning of the European Union, has been defined by the United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2005) as: "*When human activities may lead to morally unacceptable harm [to the environment] that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm. The judgement of plausibility should be grounded in scientific analysis*".

Box 1: The legislative basis for Appropriate Assessment

Conservation of Habitats and Species Regulations 2017 (As Amended)

With specific reference to Neighbourhood Plans, Regulation 106(1) states that:

“A qualifying body which submits a proposal for a neighbourhood development plan must provide such information as the competent authority [the Local Planning Authority] may reasonably require for the purpose of the assessment under regulation 105... [which sets out the formal process for determination of ‘likely significant effects’ and the appropriate assessment].”

- 1.9 It is therefore important to note that this report has two purposes:
- To assist the Qualifying Body (Stanstead Abbots Parish Council) in preparing their plan by recommending (where necessary) any adjustments required to protect European sites, thus making it more likely their plan will be deemed compliant with the Conservation of Habitats and Species Regulations 2017 (as amended); and
 - On behalf of the Qualifying Body, to assist the Local Planning Authority (East Herts District Council) to discharge their duty under Regulation 105 (in their role as ‘plan-making authority’ within the meaning of that regulation) and Regulation 106 (in their role as ‘competent authority’).
- 1.10 **As ‘competent authority’, the legal responsibility for ensuring that a decision of ‘likely significant effects’ is made, for ensuring an ‘appropriate assessment’ (where required) is undertaken, and for ensuring Natural England are consulted, falls on the local planning authority. However, they are entitled to request from the Qualifying Body the necessary information on which to base their judgment and that is a key purpose of this report.**
- 1.11 Over the years, ‘Habitats Regulations Assessment’ (HRA) has come into wide currency to describe the overall process set out in the Habitats Regulations, from screening through to identification of IROPI. This has arisen in order to distinguish the overall process from the individual stage of “Appropriate Assessment”. Throughout this Report the term HRA is used for the overall process and restricts the use of Appropriate Assessment to the specific stage of that name.

Quality Assurance

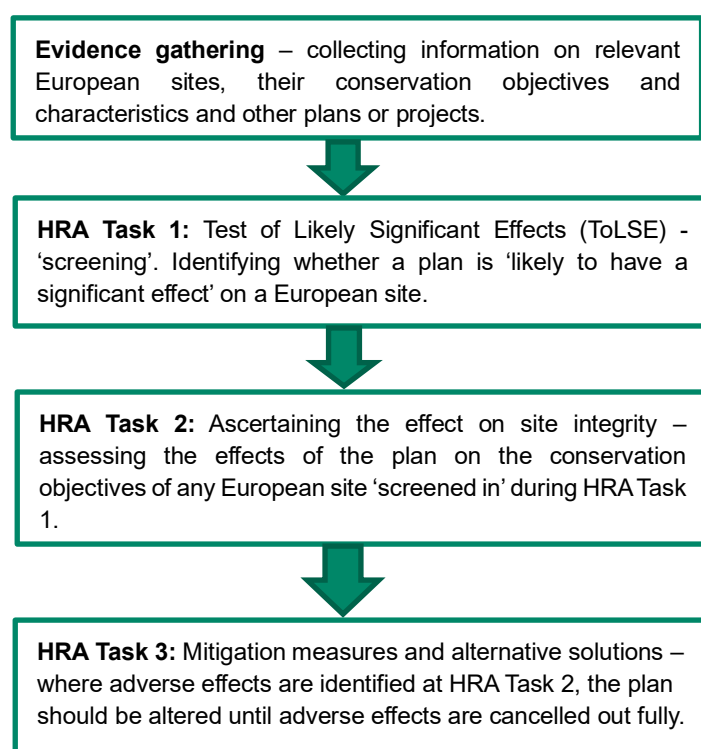
- 1.1 This report was undertaken in line with AECOM’s Integrated Management System (IMS). Our IMS places great emphasis on professionalism, technical excellence, quality, environmental and Health and Safety management. All staff members are committed to establishing and maintaining our certification to the international standards BS EN ISO 9001:2015 and 14001:2015, and ISO 44001:2017 and ISO 45001:2018. In addition, our IMS requires careful selection and monitoring of the performance of all sub-consultants and contractors.
- 1.2 All AECOM Ecologists working on this project are members (at the appropriate level) of the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow their code of professional conduct (CIEEM, 2017).

2. Methodology

Introduction to HRA Methodology

- 2.1 The HRA will be carried out with reference to the general EC guidance on HRA³; Natural England has produced its own internal guidance⁴ as has the UK government⁵. These will be referred to in undertaking this HRA.
- 2.2 **Figure 1** below outlines the stages of HRA according to current guidance. The stages are essentially iterative, being revisited as necessary in response to more detailed information, recommendations and any relevant changes to the Plan until no significant adverse effects remain.

Figure 1. Four Stage Approach to Habitats Regulations Assessment. Source EC, 2011.



Description of HRA Tasks

HRA Task 1 – Test of Likely Significant Effects (ToLSE)

- 2.3 Following evidence gathering, the first stage of any Habitats Regulations Assessment is a Test of Likely Significant Effects (ToLSE) test - essentially a brief, high-level assessment to decide whether the full subsequent stage known as Appropriate Assessment is required. The essential question is:
- *"Is the project, either alone or in combination with other relevant projects and plans, likely to result in a significant effect upon European sites?"*
- 2.4 The objective is to 'screen out' those plans and projects that can, without any detailed appraisal, be concluded to be unlikely to result in significant adverse effects upon European sites, usually because there is no mechanism for an adverse interaction.

³ European Commission (2001): Assessment of plans and projects significantly affecting Natura 2000 Sites: Methodological Guidance on the Provisions of Article 6(3) and 6(4) of the Habitats Directive.

⁴ http://www.ukmpas.org/pdf/practical_guidance/HRGN1.pdf

⁵ [Habitats regulations assessments: protecting a European site - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

- 2.5 The ToLSE is based on identification of the Source of impact, the Pathway of that impact that exists to Receptors and then confirmation of the specific European Site receptors. These are normally designated features but also include habitats and species fundamental to those designated features achieving favourable conservation status (notably functionally linked land outside the European site boundary).
- 2.6 In the Waddenzee case⁶, the European Court of Justice ruled on the interpretation of Article 6(3) of the Habitats Directive, 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); and
 - 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).
- 2.7 The ToLSE consists of two parts: firstly, determining whether there are any policies that could result in negative impact pathways and secondly determining whether there are any European sites that might be affected.
- 2.8 This ToLSE report identifies European designated sites that could be affected by the Plan and also those impact pathways that are most likely to require consideration.
- 2.9 It is important to note that the ToLSE must generally follow the precautionary principle as its main purpose is to determine whether the subsequent stage of 'appropriate assessment' (i.e., a more detailed investigation) is required.

HRA Task 2 – Appropriate Assessment (AA)

- 2.10 Where it is determined that a conclusion of 'no Likely Significant Effect' cannot be drawn, the analysis must proceed to the next stage of HRA known as Appropriate Assessment. Case law has clarified that 'Appropriate Assessment' is not a technical term. In other words, there are no particular technical analyses, or level of technical analysis, that are classified by law as belonging to appropriate assessment rather than ToLSE. Appropriate Assessment refers to whatever level of assessment is appropriate to form a conclusion regarding effects on the integrity (coherence of structure and function) of European sites in light of their conservation objectives.
- 2.11 By virtue of the fact that it follows the ToLSE process, there is a clear implication that the analysis will be more detailed than undertaken at the previous stage. One of the key considerations during Appropriate Assessment is whether there is available mitigation that would entirely address the potential effect. In practice, the Appropriate Assessment would take any policies or allocations that could not be dismissed following the high-level Likely Significant Effects Test analysis and assess the potential for an effect in more detail, with a view to concluding whether there would actually be an adverse effect on site integrity (in other words, disruption of the coherent structure and function of the European site(s)).
- 2.12 In 2018 the Holohan ruling⁷ handed down by the European Court of Justice included among other provisions paragraph 39 of the ruling stating that *'As regards other habitat types or species, which are present on the site, but for which that site has not been listed, and with respect to habitat types and species located outside that site, ... typical habitats or species must be included in the appropriate assessment, if they are necessary to the conservation of the habitat types and species listed for the protected area'* [emphasis added].
- 2.13 In evaluating significance, AECOM will rely on professional judgement as well as the results of bespoke studies, supported by appropriate evidence/data, and previous stakeholder consultation regarding development impacts on the European sites considered within this assessment.

HRA Task 3 - Mitigation

- 2.14 Where necessary, measures will be recommended for incorporation into the Plan in order to avoid or mitigate adverse effects on European sites. There is considerable precedent, both nationally and locally, concerning the level of detail that a Plan document needs to contain regarding mitigation for recreational

⁶ Case C-127/02

⁷ Case C-461/17

impacts on European sites, for example. The implication of this precedent is that it is not necessary for all measures that will be deployed to be fully developed prior to adoption of the Plan, but the Plan must provide an adequate policy framework within which these measures can be delivered.

- 2.15 In evaluating significance, AECOM has relied on professional judgement and the DP HRA regarding development impacts on the European sites considered within this assessment.
- 2.16 When discussing 'mitigation' for a Neighbourhood Plan document, one is concerned primarily with the policy framework to enable the delivery of such mitigation rather than the details of the mitigation measures themselves since the Local Development Plan document is a high-level policy document. A Neighbourhood Plan is a lower-level constituent of a Local Development Plan.

Confirming Other Plans and Projects That May Act 'In Combination'

- 2.17 It is a requirement of the Regulations that the impacts of any land use plan being assessed are not considered in isolation but in combination with other plans and projects that may also be affecting the European site(s) in question.
- 2.18 In considering the potential for combined regional housing development to impact on European sites the primary consideration is the impact of visitor numbers – i.e., recreational pressure and urbanisation.
- 2.19 When undertaking this part of the assessment it is essential to bear in mind the principal intention behind the legislation i.e., to ensure that those projects or plans (which in themselves may have minor impacts) are not simply dismissed on that basis but are evaluated for any cumulative contribution they may make to an overall significant effect. In practice, in-combination assessment is therefore of greatest relevance when the plan or policy would otherwise be screened out because its individual contribution is inconsequential.
- 2.20 The following plans and projects (**Table 1**) are considered in-combination with the SASMNP:

Table 1. Development proposed in neighbouring districts

District authority	Development document	Proposed developments	Conclusions in HRA
Harlow Council	Local Development Plan	12,000 – 15,000 homes by 2031	HRA ⁸ (2018) concluded no adverse effect on the integrity of Wormley Hoddesdonpark Woods SAC, Lee Valley SPA or Lee Valley Ramsar site through any pathway of impact. In the light of the updated HMA air quality modelling released in January 2019 this HRA is also able to conclude no adverse effect on the integrity of Epping Forest SAC through the air quality pathway.
Hertsmere Borough Council	Local Plan 2012 – 2027	3,896 homes by 2027	Appropriate Assessment ⁹ (2016) concluded that the Hertsmere Local Plan is unlikely to have a significant effect on any European site, habitat or species
Welwyn Hatfield Borough Council	Local Plan	12,000 homes by 2032	Appropriate Assessment ¹⁰ concluded that the Local Plan would not have adverse effects on the integrity of Lee Valley SPA, either alone or in-combination, and additional recreational pressures, caused by the Plan, on any European sites are considered unlikely.
Enfield Council	Local Plan	34,500 homes by 2036	2014 HRA concluded that all likely significant effects alone or in-combination, on European sites, have been avoided.

⁸ AECOM 92018) Habitats Regulations Assessment of Harlow Local Development Plan Submitted Strategic and Development Management Policies 2018. Available online www.harlow.gov.uk/planning-and-building-control/planning-policy/harlow-local-development-plan

⁹ Hertsmere Borough Council (2016) Sustainability Appraisal Scoping Report – Appropriate Assessment chapter. Available online at: <https://www.hertsmere.gov.uk/Documents/09-Planning--Building-Control/Planning-Policy/Local-Plan/Scoping-Report-with-additional-SPDs.pdf>

¹⁰ Land Use Consultants (2016) Welwyn and Hatfield Proposed Submission Local Plan 2016 Habitat Regulations Assessment, August 2016

District authority	Development document	Proposed developments	Conclusions in HRA
East Herts District Council	District Plan	16,390 homes by 2033 (of which 94 have been assigned to Stanstead Abbots and St Margaret's)	The HRA ¹¹ concluded that, should all new development deliver greenspace in line with NE's Accessible Natural Greenspace Standard (ANGSt), Lee Valley SPA remains adequately protected.
Epping Forest District Council	Local Plan	11,400 new homes by 2033	The HRA ¹² of the Epping Forest Local Plan concluded that an adverse effect on integrity will not occur on any European site. This is based on the delivery of mitigation strategies (one for recreational pressure and an Air Pollution Mitigation Strategy for air quality) that will protect the SAC's conservation objectives from effects on integrity associated with air pollution and public access.
Broxbourne Borough Council	Local Plan	7,718 homes by 2033	The HRA ¹³ for the Broxbourne Local Plan concludes that, based on the Council's continued adoption and progress of the relevant monitoring and mitigation strategies, all potential LSEs on European sites caused by the Broxbourne Local Plan alone or in-combination can be objectively ruled out.

- 2.21 By 2036, these seven districts propose to have delivered at least 97,904 – 100,904 homes, of which 94 have been allocated to Stanstead Abbots.
- 2.22 The East Herts District Plan states *"The villages of Stanstead Abbots & St Margaret's will be encouraged to consider whether it is appropriate through the formulation of a Neighbourhood Plan to accommodate additional development especially where it contributes to wider sustainability objectives and the delivery of community benefits."*
- 2.23 The 94 units proposed in the adopted East Herts District Plan were considered in combination with the remaining growth in and beyond East Herts as part of the District Plan HRA. However, in addition to the 94 units proposed in the East Herts District Plan, an additional 8 units are proposed in the SASMNP (refer to **Table 5**). The focus of this HRA is therefore to determine whether these additional 8 units will materially change the conclusions of the District Plan HRA regarding growth at Stanstead Abbots & St Margaret's.

¹¹ AECOM (2016) East Herts District Plan Habitats Regulations Assessment, September 2016 . Available online at: <http://democracy.eastherts.gov.uk/documents/s35911/Habitat%20Regulations%20Assessment%20%20ERP%20B%20HRA.pdf>

¹² AECOM (2021) Habitats Regulations Assessment of Epping Forest District Local Plan. Available online https://www.efdclocalplan.org/wp-content/uploads/2021/07/EB211A-Epping-Forest-Local-Plan-HRA-June-2021-final-for-issue_Optimized-1.pdf

¹³ LEPUS CONSULTING (2018) Habitat Regulations Assessment of the Broxbourne Local Plan HRA Appropriate Assessment Available online <https://www.broxbourne.gov.uk/downloads/file/913/ev1-habitats-regulations-assessment>

3. European Sites

- 3.1 There are no standard criteria for determining the ultimate physical scope of an HRA. Rather, the source-pathway-receptor model should be used to determine whether there is any potential pathway connecting development to any European sites.
- 3.2 In the case of the SASMNP, an area extending to 15 km from the Parish boundary was selected in which European sites were identified. European sites where there is a pathway by which hydrological impact might occur were also included. A search radius of 15 km has been used for this analysis on the basis that any potential for pollution effects at greater distances is likely to be negligible due to dilution factors.
- 3.3 Epping Forest SAC has been considered as it is within 15 km of the Parish Boundary (c.10km south); however this European site has been scoped out due to the lack of hydrological connection, due to distance from the core 6.2km recreational catchment of the SAC as identified by visitor surveys (discussed in the Epping Forest District Local Plan HRA) and because an 'in combination' air quality modelling exercise undertaken for Epping Forest Local Plan HRA included an allowance for growth in East Herts and concluded that growth in that district (as well as Harlow and Uttlesford) would make a negligible contribution to traffic-related air quality impacts on the SAC. It is therefore reasonable to conclude that there are no impact pathways to this European site.
- 3.4 In the case of the SASMNP, it has been determined that the European sites identified in **Table 2** require consideration. The locations of these European sites in relation to the SASMNP boundary are illustrated in **Appendix A, Figure 1A**.

Table 2. European sites for consideration and their location in relation to Stanstead Abbots & St Margaret's Parish boundary

European site	Location and reason for inclusion
Lee Valley SPA/ Ramsar	Partially within the boundary Susceptible to recreational pressure, air quality reduction, water quality, changes in water levels and birds may potentially use habitat within Stanstead Abbots (supporting habitat).
Wormley-Hoddesdonpark Woods SAC	1.6 km south-west Susceptible to recreational pressure and air quality reduction.

Source: www.magic.defra.gov.uk

- 3.5 The reason for designation, conservation objectives and environmental vulnerabilities of the European sites are detailed below.

Lee Valley SPA/ Ramsar

Introduction

- 3.6 The Lee Valley SPA/ Ramsar comprises a series of embanked water supply reservoirs, sewage treatment lagoons and former gravel pits along approximately 24 km of the valley. These waterbodies support internationally important numbers of wintering gadwall (*Anas strepera strepera*) and shoveler (*Anas clypeata*) and nationally important numbers of several other bird species.
- 3.7 The site also contains a range of wetland and valley bottom habitats, both man-made and semi-natural, which support a diverse range of wetland fauna and flora.

Reasons for SPA Designation¹⁴

- 3.8 Qualifying Annex I species (in any season):

¹⁴ www.publications.naturalengland.org.uk/publication/5670650798669824

- Bittern (*Botaurus stellaris*)
- 3.9 Supports 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed on Annex I), in any season:
- Shoveler
 - Gadwall

Ramsar Qualifying Features¹⁵

- 3.10 The Lee Valley qualifies as a Ramsar site under the following Ramsar criteria:
- Criterion 2 - The site supports the nationally scarce plant species whorled water-milfoil (*Myriophyllum verticillatum*) and the rare or vulnerable invertebrate *Micronecta minutissima* (a water-boatman).
 - Criterion 6
Species with peak counts in spring/ autumn: Shoveler
Species with peak counts in winter: Gadwall

Conservation Objectives¹⁶

- 3.11 "With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;
- 3.12 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;
- The extent and distribution of the habitats of the qualifying features
 - The structure and function of the habitats of the qualifying features
 - The supporting processes on which the habitats of the qualifying features rely
 - The population of each of the qualifying features, and,
 - The distribution of the qualifying features within the site."

Current Pressures and Threats

- 3.13 The Site Improvement Plan¹⁷ identifies the following pressures and threats to the SPA:
- Water pollution
 - Hydrological changes
 - Public access/ disturbance
 - Inappropriate scrub control
 - Fisheries: fish stocking
 - Inappropriate cutting/ mowing
 - Air pollution: risk of atmospheric nitrogen deposition
- 3.14 The Ramsar Information Sheet (RIS)¹⁸ does not identify any factors (past, present or potential) adversely affecting the site's ecological character.

¹⁵ www.jncc.gov.uk/jncc-assets/RIS/UK11034.pdf

¹⁶ www.publications.naturalengland.org.uk/publication/5670650798669824

¹⁷ www.publications.naturalengland.org.uk/publication/5864999960444928

¹⁸ www.jncc.gov.uk/jncc-assets/RIS/UK11034.pdf

Wormley-Hoddesdonpark Woods SAC

Introduction

3.15 Wormley Hoddesdonpark Woods has large stands of almost pure hornbeam (*Carpinus betulus*) (former coppice), with sessile oak (*Quercus petraea*) standards. Areas dominated by bluebell (*Hyacinthoides non-scripta*) do occur, but elsewhere there are stands of great wood-rush (*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*.

Reasons for Designation¹⁹

3.16 Qualifying Annex I habitat:

- Sub-Atlantic and medio-European oak or oak-hornbeam forests of the *Carpinion betuli*. (Oak-hornbeam forests)

Conservation Objectives²⁰

3.17 "With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

3.18 Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats
- The structure and function (including typical species) of qualifying natural habitats, and
- The supporting processes on which qualifying natural habitats rely"

Current Pressures and Threats

3.19 The Site Improvement Plan²¹ identifies the following pressures and threats to the SAC:

- Disease
- Invasive species
- Air pollution: risk of atmospheric nitrogen deposition
- Deer
- Vehicles: illicit
- Forestry and woodland management
- Public access/ disturbance

¹⁹ www.publications.naturalengland.org.uk/publication/4919819195383808

²⁰ Ibid

²¹ www.publications.naturalengland.org.uk/publication/6314181103976448

4. Test of Likely Significant Effects

Background to Stanstead Abbots & St Margaret's Parish

- 4.1 Stanstead Abbots & St Margaret's is a village and civil parish in the district of East Hertfordshire. It lies on the county boundary with Essex, and is situated approximately 32 km north of London.
- 4.2 Once situated on the main A414, Stanstead Abbots & St Margaret's has many old buildings in its High Street, although many have now made way for newer residential properties. The village is on the Hertford East Branch Line, with trains from St Margaret's station to Liverpool Street Station. The main industry in the village used to be making malt but many of the original maltings have now been demolished to make way for a small business park.

Impact Pathways

- 4.3 Based upon Natural England Site Improvement Plans and Conservation Objectives Supplementary Advice documents, there are several impact pathways that require consideration regarding increased development within the SASMNP area and the European sites identified in **Table 2**.
- 4.4 **Table 3** shows impact pathways considered further and those dismissed from further investigation with the justification.

Table 3. European sites and potential impact pathways considered during Stage 1 Screening

European site	Impact pathways considered	Impact pathways dismissed and justification
Lee Valley SPA/ Ramsar	<ul style="list-style-type: none"> Water pollution Hydrological changes Public access/ disturbance Air pollution: risk of atmospheric nitrogen deposition 	<ul style="list-style-type: none"> Inappropriate scrub control – relates to the requirement for appropriate scrub control to maintain mosaic of habitats for SPA birds. Implementation of SASMNP will not influence management practices. Fisheries: Fish stocking – this is to ensure that the fish population and species composition is appropriate to ensure suitable habitats including food resource and water quality are maintained for SPA bird species. Implementation of SASMNP will not influence fish stocking. Invasive species – relates to <i>Azolla</i> and/or invasive aquatic blanket weeds will adversely affect aquatic habitat (food sources). Implementation of SASMNP will not influence invasive species. Inappropriate cutting/ mowing – relates to the reedbed requiring rotational management for bittern. Implementation of SASMNP will not influence cutting/ mowing regimes.
Wormley-Hoddesdonpark Woods SAC	<ul style="list-style-type: none"> Air pollution: risk of atmospheric nitrogen deposition Vehicles: illicit Public access/ disturbance 	<ul style="list-style-type: none"> Disease – relates to the spread of Acute Oak Decline (AOD). Implementation of SASMNP will not influence the spread of disease. Invasive species – relates to the spread of non-native invasive tree and shrub species. Implementation of SASMNP will not influence the spread of invasive species. Deer – relates to browsing and grazing by deer reducing tree regeneration (from seedlings or coppice stools) and damaging the woodland understorey and ground flora. Implementation of SASMNP will not influence the impact of deer. Forestry and woodland management – Implementation of SASMNP will not influence forestry and woodland management practices.

4.5 **Table 4** describes those impact pathways considered applicable further. The consideration of Neighbourhood Plan policies (the Test of Likely Significant Effects) is then documented in **Table 5**.

Table 4. Description of potential impact pathways from implementation of the SASMNP on European sites

Impact pathway	Discussion
Hydrological changes (including changes in water quality)	<p>Excessive changes to hydrology, such as through effects on water flow and volume, of European Sites are most likely to be the consequence of increased water abstraction for the public water supply and surface water run-off from impermeable urban surfaces.</p> <p>The East of England is generally an area of high-water stress. The most recent full CAMS assessment for the Upper Lee found that the Management Unit for Rivers Lee, Mimram, Beane, Ash, Rib and Upper Stort was over-abstracted. Rye Meads SSSI component of the Lee Valley SPA/Ramsar site is situated within East Herts and is particularly sensitive to high levels of freshwater abstraction (resulting in a reduction in water levels within the SPA).</p> <p>East Herts lies within the Affinity Water supply area, specifically their Central region, within Water Resource Zone (WRZ) 3 and 5. Approximately 60% of the Central region's water supply comes from groundwater sources (chalk and gravel aquifers) and 40% comes from surface water sources and imports from neighbouring water.</p> <p>The quality of the water that feeds European sites is an important determinant of the nature of their habitats and the species they support. Poor water quality can have a range of environmental impacts:</p> <p>At high levels, toxic chemicals and metals can result in immediate death of aquatic life, and can have detrimental effects even at lower levels, including increased vulnerability to disease and changes in wildlife behaviour.</p> <ul style="list-style-type: none"> • Eutrophication, the enrichment of plant nutrients in water, increases plant growth and consequently results in oxygen depletion. Algal blooms, which commonly result from eutrophication, increase turbidity and decrease light penetration. The decomposition of organic wastes that often accompanies eutrophication deoxygenates water further, augmenting the oxygen depleting effects of eutrophication. In the marine environment, nitrogen is the limiting plant nutrient and so eutrophication is associated with discharges containing available nitrogen. • Some pesticides, industrial chemicals, and components of sewage effluent are suspected to interfere with the functioning of the endocrine system, possibly having negative effects on the reproduction and development of aquatic life. <p>Sewage and some industrial effluent discharges contribute to increased nutrients in the European sites and in particular to phosphate levels in watercourses.</p> <p>The HRA for the East Herts District Plan concluded that there would be no adverse effects on the Lee Valley SPA/ Ramsar as a result of changes in hydrology and water quality, however the SASM NP proposes an additional 8 residential units therefore this needs further consideration.</p>
Public access/ disturbance (including illicit vehicles)	<p>Recreational use of an internationally designated site has potential to:</p> <ul style="list-style-type: none"> • Cause damage through mechanical/ abrasive damage and nutrient enrichment; • Cause disturbance to sensitive species, particularly ground-nesting birds and wintering wildfowl; and • Prevent appropriate management or exacerbate existing management difficulties. <p>Different types of internationally designated sites are subject to different types of recreational pressures and have different vulnerabilities. Studies across a range of species have shown that the effects from recreation can be complex.</p> <p>The Site Improvement Plan (SIP) for the Lee Valley SPA identifies that '<i>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</i>'. It does not conclude that current recreational activity on the site is unsustainable; rather it identifies a project to first '<i>Investigate whether there is a need for change to access management</i>'. As such this site has the potential to be sensitive to any increases in recreational pressure stemming from new development.</p>

Impact pathway

Discussion

The part of the SPA/Ramsar site that lies within the parish boundary is Rye Meads Nature Reserve, which is managed by the RSPB. The reserve is laid out in considerable detail with a network of ten hides and clearly marked footpaths/boardwalks with screening vegetation that are specifically laid out and designed to route people away from the sensitive areas and minimise disturbance while at the same time accommodating high numbers of visitors. Moreover, no dogs are allowed (except registered assistance dogs) and the wet and marshy/open water nature of the habitats on site inherently limits off-track recreational activity, rendering it difficult to accomplish and unappealing. For this reason, it is considered that the vulnerability of Rye Meads Nature Reserve to the potential adverse effects of recreational activity that can affect other less well-managed sites is very low.

Within the past ten years landowners/managers within the SPA (RSPB, the local Wildlife Trust, the Regional Park Authority and Thames Water) have undertaken initiatives both to facilitate and to promote greater public access to the SPA for recreation. Changing public access is fundamentally linked with increasing visitor numbers given that one of the primary reasons for changing the access is to attract more visitors. Thames Water's flagship Walthamstow Wetlands project, which opened in 2017, aims to substantially increase public access to, and use of, Walthamstow Reservoirs, which were currently little used for recreation and had only been accessible by prior arrangement. Clearly, the various owners and managers of the SPA components would not have embarked on these initiatives (or have been permitted to do it by competent authorities) if it was considered likely that by providing and promoting greater public access they would risk an adverse effect on the SPA.

This is consistent with the conclusion of the HRA of the adopted East Herts District Plan and with that of the recent Epping Forest District Local Plan.

Wormley-Hoddesdonpark Woods SAC is located c.1.6km from the parish boundary. The SAC is a large, attractive area of ancient woodland with extensive public access and close to large urban centres. The majority of the woods in the complex are in sympathetic ownership, with no direct threat (Wormley-Hoddesdonpark Wood, for example, is managed by The Woodland Trust).

With regards to recreational pressures, the Site Improvement Plan for the SAC indicates that the site is heavily used by the public for recreational purposes. However, it also indicates that recreational activity is generally well-managed. Sensitive management of access points and routes by the site's main owners has been largely successful in mitigating the potential adverse effects of this high level of use. As such, general recreational pressure is not indicated in the Site Improvement Plan as a current or future obstacle to achieving or maintaining favourable conservation status and preserving the integrity of the SAC.

The site is split in to the 192.5ha Wormley Hoddesdonpark Woods South SSSI and the 143.9ha Wormley Hoddesdonpark Woods North SSSI. The qualifying features in both areas are predominantly in a favourable condition and no adverse effects have been recorded as a result of recreational pressures. Access points and routes into the site are closely managed.

Visitor survey data for the SAC is lacking. Data for other large woodland European sites offers some indication of the distance people would travel to visit the SAC. Surveys of Epping Forest²² suggest visitors are likely to only travel up to 3km. Natural England's Monitor of Engagement with the Natural Environment (MENE) found that, in 2014/15, 89% of visitors to a woodland or forest travelled less than 5 miles, or 8km, to get there whilst approximately 70% travelled less than 3km²³.

The qualifying features of the SAC are considered to be resilient to the effects of public access and are currently in a favourable condition. Implementation of the SASMNP is not anticipated to lead to a significant increase in visitors to the SAC. Furthermore, the SAC is closely managed to the extent that impacts of an increase in visitors would be limited.

Although within 3km of Stanstead Abbots & St Margaret's parish boundary, based on the issues identified in the Site Improvement Plan and the fact that concerns about recreational pressure on this site were not flagged by Natural England during the preparation of the East Herts District Plan and its HRA, there is no basis to conclude that public access/ disturbance (including illicit vehicles) would result in a likely significant effect on the SAC.

²² City of London (2014) Epping Forest Visitor Survey 2014 Results

²³ Natural England (2017) Monitor of Engagement with the Natural Environment (MENE) available online at: www.naturalengland.tns-global.com/Default.aspx

Impact pathway

Discussion

It is considered that this pathway can be **screened out** both alone and in-combination, for both the SPA and SAC, which is consistent with the approach taken in the HRA of the adopted East Herts District Plan and of the recent Epping Forest District Local Plan.

Air pollution: risk of atmospheric nitrogen deposition

Parts of the **Lee Valley SPA/ Ramsar** site are sensitive to deterioration in air quality, as the supporting habitat consists of terrestrial features that can be degraded by excessive deposition of pollutants. The Ramsar site is partly designated for its aquatic plant life, specifically the whorled water milfoil, which is dependent on calcareous water (and thus susceptible to acidification of the aquatic environment). All forms of development within the NP that would be likely to lead to increases in vehicle emissions within 200m of Lee Valley SPA and Ramsar could have potential to reduce air quality. Increased residential development would likely lead to a greater number of vehicles within the parish. As such, increased air pollution could arise relative to a situation of no growth. Pollutants released from vehicles may be carried directly by wind currents and deposited to European Sites or pollutants may become soluble and taken up during evaporation and deposited to said sites during precipitation. Guidance from the Institute of Air Quality Management and Highways England both set an impact zone of 200m from the roadside for potential significant air quality effects to vegetation from main road traffic.

As part of the Housing Market Area (HMA) assessment for the East Herts District Plan a detailed traffic modelling and air quality impact assessment was undertaken based on the provision of 16,390 new dwellings, coupled with other employment and infrastructure development. The results of this were used to inform the HRA of the District Plan.

The only portion of the SPA/ Ramsar site that is located within 200m of a major road is Rye Meads SSSI located within 200m of the A414, which is within the parish boundary. However, in their consultation responses on the East Herts District Plan and Epping Forest Local Plan Natural England confirmed that they were satisfied that the area of the Lee Valley SPA within 200m of the A414 (Rye Meads) was not susceptible to atmospheric pollution from road traffic. That site is therefore not discussed further with regard to air quality.

Wormley-Hoddesdonpark Woods SAC lies within 200m of the A10 at grid reference 535600,208750. However, this applies to a very small part of the site (approximately 500m²) much of which is a track/path/arable field boundary and which constitutes approximately 0.01% of the SAC. More-over it is situated on the edge of the 200m zone, being no closer to the A10 than 190m at any point. As such, it is considered that increases in traffic movements on the A10 could not lead to a likely significant effect on the interest features of this SAC through changes in local air quality, due to the very small area of the SAC potentially affected and the very small extent to which it is likely to be affected given it is 190m from the road. Air quality on this site is not considered further. This conclusion was drawn in the HRA of the adopted East Herts Local Plan and the recent Epping Forest District Local Plan and was accepted by Natural England.

Table 5. Screening assessment (test of likely significant effects) of the SASMNP

Policy	European Sites and Proximity to Policy Area	Brief summary	Screening outcome
Housing			
SASM H1 Village and Green Belt Boundary	N/A	Policy refers to the amended green belt boundary and specifies when development within the green belt boundary will be permitted.	No Likely Significant Effect. Screened out. This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European sites.
SASM H2 Housing Numbers	Lee Valley SPA/ Ramsar	Policy specifies 7 sites for housing development and housing numbers.	Likely Significant Effect. Screened in.

Policy	European Sites and Proximity to Policy Area	Brief summary	Screening outcome
			<p>This policy identifies sites for development and specifies housing numbers.</p> <p>Potential to cause changes in water levels due to increase in demand for water abstraction and changes in water quality.</p>
SASM H3 Land East of Netherfield Lane/south of Roydon Road	Lee Valley SPA/ Ramsar	This is a site allocation policy specifying 60 residential units within a mixed-use development.	<p>Likely Significant Effect. Screened in.</p> <p>This policy identifies a site for development and specifies housing numbers.</p> <p>Potential to cause changes in water levels due to increase in demand for water abstraction and water quality.</p>
SASM H4 Land south of South Street	Lee Valley SPA/ Ramsar	This is a site allocation policy. Housing numbers (up to 9 units) are specified under policy SASM H2	<p>Likely Significant Effect. Screened in.</p> <p>This policy identifies a site for development</p> <p>Potential to cause changes in water levels due to increase in demand for water abstraction and water quality.</p>
SASM H5 Land west of Amwell Lane	Lee Valley SPA/ Ramsar	This is a site allocation policy. Housing numbers (up to 8 units) are specified under policy SASM H2	<p>Likely Significant Effect. Screened in.</p> <p>This policy identifies a site for development</p> <p>Potential to cause changes in water levels due to increase in demand for water abstraction and water quality.</p>
SASM H6 Chapelfields and Abbots Way Garages	Lee Valley SPA/ Ramsar	This is a site allocation policy. Housing numbers (up to 6 units) are specified under policy SASM H2	<p>Likely Significant Effect. Screened in.</p> <p>This policy identifies a site for development</p> <p>Potential to cause changes in water levels due to increase in demand for water abstraction and water quality.</p>
SASM H7 Land East of Amwell Lane	Lee Valley SPA/ Ramsar	This is a site allocation policy. Housing numbers (up to 2 units) are specified under policy SASM H2	<p>Likely Significant Effect. Screened in.</p> <p>This policy identifies a site for development</p> <p>Potential to cause changes in water levels due to increase in demand for water abstraction and water quality.</p>
SASM H8: Sites with Planning Permission	Lee Valley SPA/ Ramsar	This is a site allocation policy with planning permission for 10 residential units.	<p>Likely Significant Effect. Screened in.</p>

Policy	European Sites and Proximity to Policy Area	Brief summary	Screening outcome
			<p>This policy identifies sites for development and specifies housing numbers.</p> <p>Potential to cause changes in water levels due to increase in demand for water abstraction and water quality.</p>
SASM H9: Brownfield Land	N/A	Policy offers support for the development of small infill sites within the existing built-up area.	<p>No Likely Significant Effect. Screened out.</p> <p>This is a development management policy and does not specifically allocate sites for development, however any identified will be within the existing built-up area. Therefore, no impact pathways exist to European Sites.</p>
SASM H10: Type and Mix of Housing	N/A	Policy describes the requirement for a range of housing types, sizes and tenures.	<p>No Likely Significant Effect. Screened out.</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European sites.</p>
SASM H11: First Homes	N/A	Policy describes the need for the inclusion of affordable housing within developments, a percentage of which are to be sold as new homes.	<p>No Likely Significant Effect. Screened out.</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European sites.</p>
Design			
SASM D1 Design of Development	N/A	Policy describes the design requirements for new developments.	<p>No Likely Significant Effect. Screened out.</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European sites.</p>
SASM D2 Housing Density	N/A	Policy describes how the density of new development needs to be appropriate to its location.	<p>No Likely Significant Effect. Screened out.</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European sites.</p>
SASM D3 Amenity	N/A	Policy describes the need for new housing developments to provide good standards of daylight and sunlight.	<p>No Likely Significant Effect. Screened out.</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European sites.</p>
SASM D4 Residential Amenity Space	N/A	Policy describes the need for new housing developments to provide adequate recreational space.	<p>No Likely Significant Effect. Screened out.</p> <p>This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European sites.</p>

Riverside

Policy	European Sites and Proximity to Policy Area	Brief summary	Screening outcome
SASM R1 Riverside Development	N/A	Policy describes criteria for acceptable riverside development	No Likely Significant Effect. Screened out. This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European sites.
SASM R2 Floating Structures	N/A	Policy describes criteria for acceptable structures	No Likely Significant Effect. Screened out. This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European sites.
Heritage Assets			
SASM HA1: Heritage Assets	N/A	Policy aims to prevent new developments from having a negative impact on the local character of heritage assets.	No Likely Significant Effect. Screened out. This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European sites.
SASM HA2: Non-designated Heritage Assets	N/A	Policy identifies structures where local distinctiveness must be taken into account.	No Likely Significant Effect. Screened out. This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European sites.
SASM HA3: Archaeology	N/A	Policy identifies specific archaeological areas which must be taken into account. Proposals that may cause a direct impact must provide a pre-development desk-based assessment of potential impact.	No Likely Significant Effect. Screened out. This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European sites.
SASM HA4: Protected Views	N/A	Policy identifies important local views and states that development proposals which negatively impact these views will not be supported.	No Likely Significant Effect. Screened out. This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European sites.
Natural Environment			
SASM NE1 Local Green Space (LGS)	N/A	Policy identifies areas of Local Green Space and aims to protect these areas.	No Likely Significant Effect. Screened out. This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European sites.
SASM NE2 Nature Conservation	N/A	Policy describes how biodiversity net gain is expected to be demonstrated as part of any new development. Biodiversity net gain should be calculated using the Defra Biodiversity Metric.	No Likely Significant Effect. Screened out. Policy has specific wording relating to the protection of habitats and species of international/ national importance against development. No impact pathways exist to European sites.

Policy	European Sites and Proximity to Policy Area	Brief summary	Screening outcome
SASM NE3 Valued Hedgerows and Trees	N/A	Policy describes the need to protect and retain trees and hedgerows and sets a requirement for development to replace any trees removed.	No Likely Significant Effect. Screened out. This policy is designed to protect and enhance the natural environment. This policy is considered to have no adverse impacts on European sites.
SASM NE4 Environmental Impact of Flooding	N/A	Policy recognises the need for an effective flood risk management to be demonstrated as part of major development proposals.	No Likely Significant Effect. Screened out. Policy sets out the approach to managing flood risk and surface water and commits developments to demonstrating that they will not exacerbate flood risk. This policy is considered to have no adverse impacts on European sites.
Leisure and Community Facilities			
SASM CL1 Existing Community Facilities	N/A	Policy supports the extension or relocation of existing community facilities.	No Likely Significant Effect. Screened out. This is a statement of intent and identifies facilities for renewal/improvement. Therefore, no impact pathways exist to European Sites.
SASM CL2 Loss of Existing Facilities	N/A	Policy sets out how existing community facilities will be protected from development/ change in use.	No Likely Significant Effect. Screened out. This is a statement of intent. Therefore, no impact pathways exist to European Sites.
SASM CL3 Additional Leisure Facilities	N/A	Additional facilities will be supported provided that they demonstrate inclusive design and are in a suitable location.	No Likely Significant Effect. Screened out. This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European sites.
SASM CL4 Facilities to Meet an Identified Need	N/A	The need for various facilities in the village has been identified and provision of these facilities will be supported provided they are in keeping with policies elsewhere in the Neighbourhood Plan.	No Likely Significant Effect. Screened out. This is a development management policy and does not specifically allocate sites for development. Therefore, no impact pathways exist to European sites.
Business and Employment			
SASM B1 Local Employment Areas	N/A	Policy supports the conversion or redevelopment of existing employment areas where they enhance the employment offer	No Likely Significant Effect. Screened out. This is a development management policy and does not specifically allocate additional sites for development. Therefore, no impact pathways exist to European sites.
SASM B2 The High Street	N/A	Policy aims to strengthen the High Street area to meet changing retail requirements.	No Likely Significant Effect. Screened out. This is a development management policy and does not specifically allocate additional sites for development. Therefore, no impact pathways exist to European sites

Policy	European Sites and Proximity to Policy Area	Brief summary	Screening outcome
SASM B3 Flexible Working	N/A	Policy specifies a requirement for all new residential and employment development to be designed to connect to high quality communications infrastructure.	No Likely Significant Effect. Screened out. This is a statement of intent and does not specifically allocate sites for development. Therefore, no impact pathways exist to European Sites.
SASM B4 Farm Diversification and Tourism Related Business	N/A	Diversification and tourism-based development will be supported in principle, subject to specified criteria, support for Lee Valley Park development framework and subject to other policies within the plan.	No Likely Significant Effect. Screened out. This is a development management policy and does not specifically allocate additional sites for development. Therefore, no impact pathways exist to European sites.
SASM B5 Design of Employment Premises	N/A	Policy describes the design requirements for new developments.	No Likely Significant Effect. Screened out. This is a development management policy and does not specifically allocate additional sites for development. Therefore, no impact pathways exist to European sites.
Transport			
SASM TR1 Safe and Sustainable Transport	N/A	Policy seeks to promote sustainable transport by supporting development where amenities are easily accessible by pedestrians and cyclists	No Likely Significant Effect. Screened out. This policy relates to supporting developments which encourage the use of modes of sustainable transport and as such implementation of this policy is unlikely to have adverse impacts on European sites.
SASM TR2 Traffic Impact of Major Development	N/A	Policy states that major development proposals should not generate an unacceptable increase in traffic volume and movements within or through the village. A Traffic Impact Assessment proportional to the scale of the proposed development will be required.	No Likely Significant Effect. Screened out. This is a development management policy and does not specifically allocate additional sites for development. Therefore, no impact pathways exist to European sites.
SASM TR3 Parking Standards	N/A	Policy aims to ensure adequate parking provision is made.	No Likely Significant Effect. Screened out. Policy aspires to maximise parking provision within the village. No impact pathways exist to European Sites
Implementation			
SASM IM1 Spending Priorities	N/A	Policy describes how any FINDING generated through development should be used to improve infrastructure and facilities within the area.	No Likely Significant Effect. Screened out. This details how improvements to infrastructure and Facilities will be funded, therefore, no impact pathways exist to European Sites.

Source: SASM Neighbourhood Plan Policies

5. Appropriate Assessment

- 5.1 The law does not prescribe how an appropriate assessment should be undertaken or presented but the appropriate assessment must consider all impact pathways that have been screened in, whether they are due to policies alone or to impact pathways that arise in combination with other projects and plans. That analysis is the purpose of this section. The law does not require the 'alone' and 'in combination' effects to be examined separately provided all effects are discussed.
- 5.2 By virtue of the small amount of growth the NP specifies for Stanstead Abbots, the main impact pathways of concern to this HRA i.e., hydrological changes and changes in water quality are inherently 'in combination' with neighbouring plans and projects.
- 5.3 The HRA screening exercise undertaken in **Table 5** indicates that seven NP Policies were considered to pose Likely Significant Effects for European sites alone (and will therefore also do so 'in combination' with other projects and plans) as a result of a slight increase in the number of residential units and require further assessment in terms of changes in hydrology due to abstraction for public water supply and changes in water quality due to the potential for an increase in sewage discharge:
- Policy SASM H2: Housing Numbers
 - Policy SASM H3: Land East of Netherfield Lane/south of Roydon Road (584m north-east of Lee Valley SPA/ Ramsar)
 - Policy SASM H4: Land south of South Street (587m south-east of Lee Valley SPA/ Ramsar)
 - Policy SASM H5: Land west of Amwell Lane (c.300m south-west of Lee Valley SPA/ Ramsar)
 - Policy SASM H6: Chapelfields and Abbots Way Garages (551m south-east of Lee Valley SPA/ Ramsar)
 - Policy SASM H7: Land East of Amwell Lane (211m south-west of Lee Valley SPA/ Ramsar)
 - Policy SASM H8: Sites with Planning Permission
- 5.4 All of these policies identify sites allocated for development and specify housing numbers.

Changes in Hydrology and Water Quality

Water abstraction

- 5.5 The Lee Valley SPA/Ramsar site consists of four Sites of Special Scientific Interest, of which Turnford and Cheshunt Pits SSSI, Rye Meads SSSI and Amwell Quarry SSSI all lie on the Hertfordshire/Essex border. Walthamstow Reservoirs SSSI lies within London Borough of Waltham Forest. Walthamstow Reservoirs is a sealed storage reservoir and part of the public water supply infrastructure for London. Rye Meads is unlikely to ever suffer from a shortage in water quantity due to its close relationship with Rye Meads Wastewater Treatment Works. The nearest proposed housing allocation to a relevant part of the SPA (Amwell Quarry) is 250m away and separated by the River Lee Navigation, so direct water resource effects from specific development sites will not arise. However, the quarries could theoretically be adversely affected if groundwater abstraction for public water supply was sufficiently great to cause drawdown of water levels.
- 5.6 Public water supply for East Herts is handled by Affinity Water. It lies within the Central region, crossing the Lee and Stort Water Resource Zones. The Affinity Water Central region abstracts 60% of its water supply from groundwater sources with boreholes abstracting from chalk and gravel aquifers. The current Affinity Water Water Resource Management Plan covers the period up to 2040 and states that an HRA of the WRMP has been undertaken and that they have been able to demonstrate sufficient alternative supply options to ensure that adverse effects on European sites can be avoided. As such, it can be concluded that delivery of the SASMNP will not result in adverse effects on Lee Valley SPA/Ramsar site through excessive water drawdown, either alone or in combination with other plans and projects.

Water quality

- 5.7 Change in water quality is the main pathway through which the Lee Valley SPA/Ramsar site could be adversely affected. Two parts of the Lee Valley SPA/Ramsar site lie within East Herts: Amwell Quarry and Rye Meads. The nearest proposed development site to a part of Lee Valley SPA/Ramsar site is 250m distant and separated by the River Lee Navigation, so direct surface water runoff effects on water quality will not arise. However, Rye Meads consists of non-operational land at and around the Rye Meads Wastewater Treatment Works (WwTW). Parts of the SPA consist of open water but other parts consist of fen or marsh vegetation that would theoretically be susceptible to nutrient enrichment from treated wastewater.
- 5.8 'Poor fens' (i.e., acidic fens) are strongly nitrogen limited. In other words, nitrogen availability is the factor which ultimately controls vegetation response to other nutrients and a small change in nitrogen inputs can result in a major change in the vegetation composition. In contrast, other types of fen with a relatively alkaline pH (called 'rich' fens) such as those at Rye Meads are phosphorus-limited, meaning that phosphorus availability is the factor which ultimately controls vegetation response to other nutrients. This also applies to fluvial flood-plain grasslands like those at Rye Meads SSSI. In a phosphorus limited system, high nitrogen availability will not result in a deleterious effect on vegetation provided that phosphorus availability is controlled²⁴. That is not to say that nitrogen inputs would therefore be irrelevant, but it does mean that when nitrogen is already in excess (and phosphorus inputs can be controlled) a proportionate response must be made to the risk posed by small additional nitrogen inputs. Effluent discharges from Rye Meads Sewage Treatment Works (STW) into Tollhouse Stream. The stream flows through the SSSI and has been known to back up into the marsh grassland parts of the SSSI during periods of high flow.
- 5.9 The current discharge consent for Rye Meads WwTW has been subjected to a review by the Environment Agency and Thames Water (Review of Consents) specifically for the purpose of determining whether the current consented phosphorus limits on the discharge are leading to an adverse effect on the Lee Valley SPA/Ramsar site, and if so, to amend the consent in order to avoid such an effect. As such, provided effluent from new development within the Rye Meads catchment can be accommodated within the existing volumetric discharge consent for the WwTW it can be concluded with confidence that an adverse effect on the SPA/Ramsar site is unlikely to occur from this pathway.
- 5.10 However, once the WwTW ceases to have capacity within its existing discharge consent for effluent from additional dwellings, it will be necessary for Thames Water to apply to the Environment Agency to increase the consented discharge volume, or direct flows to an alternative treatment facility. The Environment Agency is very unlikely to consent to an increase in discharge volume from the WwTW unless the phosphate concentration within the effluent can be further tightened to ensure no deterioration in water quality in Tollhouse Stream. There is a technical limit (known as the limit of Best Available Technology) to how much phosphorus removal a WwTW can incorporate. If this situation arises, there is a risk that future dwellings within the catchment could not be accommodated at Rye Meads WwTW, requiring an alternative treatment solution that does not as yet exist. Water quality is therefore an important pathway to investigate with regard to future development within the Rye Meads WwTW catchment.
- 5.11 The Harlow WCS²⁵ undertook a headroom assessment of Rye Meads WwTW in relation to committed and planned future growth scenarios with Harlow and six neighbouring authorities (East Herefordshire, North Herefordshire, Stevenage, Welwyn Hatfield, Epping Forest and Broxbourne). The catchment of Rye Meads WwTW is expected to accommodate growth within Harlow as well as a large portion of development within the neighbouring six authorities. The WCS states: the *'headroom assessment undertaken by JBA ... indicates that Rye Meads has capacity to accommodate growth within Harlow and surrounding authorities over the plan period, within the current permitted DWF discharge of 110 ML/d.*

²⁴ 'In a nutrient limited system, excess of the non-limiting nutrient may not result in any signs of enrichment in the vegetation as the plants are unable to make use of one nutrient without sufficient amounts of the other'. Source: Understanding Fen Nutrients <http://www.snh.gov.uk/docs/A416930.pdf>

²⁵ JBA Consulting (September 2018) Harlow Gilston Garden Town Water Cycle Study update (Final Report)

- 5.12 Additionally, Rye Meads WwTW is undergoing an upgrade in treatment capacity and to improve discharge quality standards (up to 447,134 Population Equivalent)²⁶. Thames Water currently expects that Rye Mead WwTW will have sufficient headroom capacity until 2036 and thus be able to cover the Neighbourhood Plan period (which runs to 2033). As such, since effluent from new development within the Rye Meads catchment can be accommodated within the existing volumetric discharge consent for the WwTW it can be concluded with confidence that an adverse effect on the SPA and Ramsar site is unlikely to occur from this pathway alone or in combination with other plans and projects.
- 5.13 However, it will be necessary to ensure that development within the catchment of Rye Meads WwTW to keep pace with the provision of wastewater treatment infrastructure and environmental capacity there. Using less water per person will reduce the impact of new development on the hydraulic capacity at Rye Meads WwTW, allowing more development to be catered for within the existing capacity and delay the need for a larger volumetric discharge consent. As a result, Policy WAT6 of the East Herts District Plan was revised to require development within the catchment of Rye Meads WwTW to keep pace with the provision of wastewater treatment infrastructure and environmental capacity there. In particular, the policy clarifies that development within the catchment cannot be occupied until such time as greater environmental capacity is delivered or confirmed at Rye Meads, or an alternative solution devised.
- 5.14 While the Neighbourhood Plan will add a further eight dwellings beyond those taken into consideration when the East Herts District Plan HRA assessment (and HRAs for adjacent authorities such as Harlow and Epping Forest District) were undertaken, this is a negligible change within the context of the large number of existing and future dwellings served by Rye Meads WwTW and will therefore make a negligible contribution to pressure on the WwTW. Moreover, the policy context described above (requiring development in the Rye Meads catchment to keep pace with available infrastructure) will ultimately protect the European site. With this over-arching District Plan policy in place, it is therefore possible to conclude that the SASM Neighbourhood Plan will not result in a water quality effect on Lee Valley SPA/Ramsar site either alone or in combination with other projects and plans.
- 5.15 It is recommended that the SASMNP reflects this East Herts District plan policy by including a new policy to state that support for new dwellings is contingent on the delivery of housing keeping pace with upgrades to Rye Meads WwTW to ensure no adverse effect on the integrity of the SPA/Ramsar.

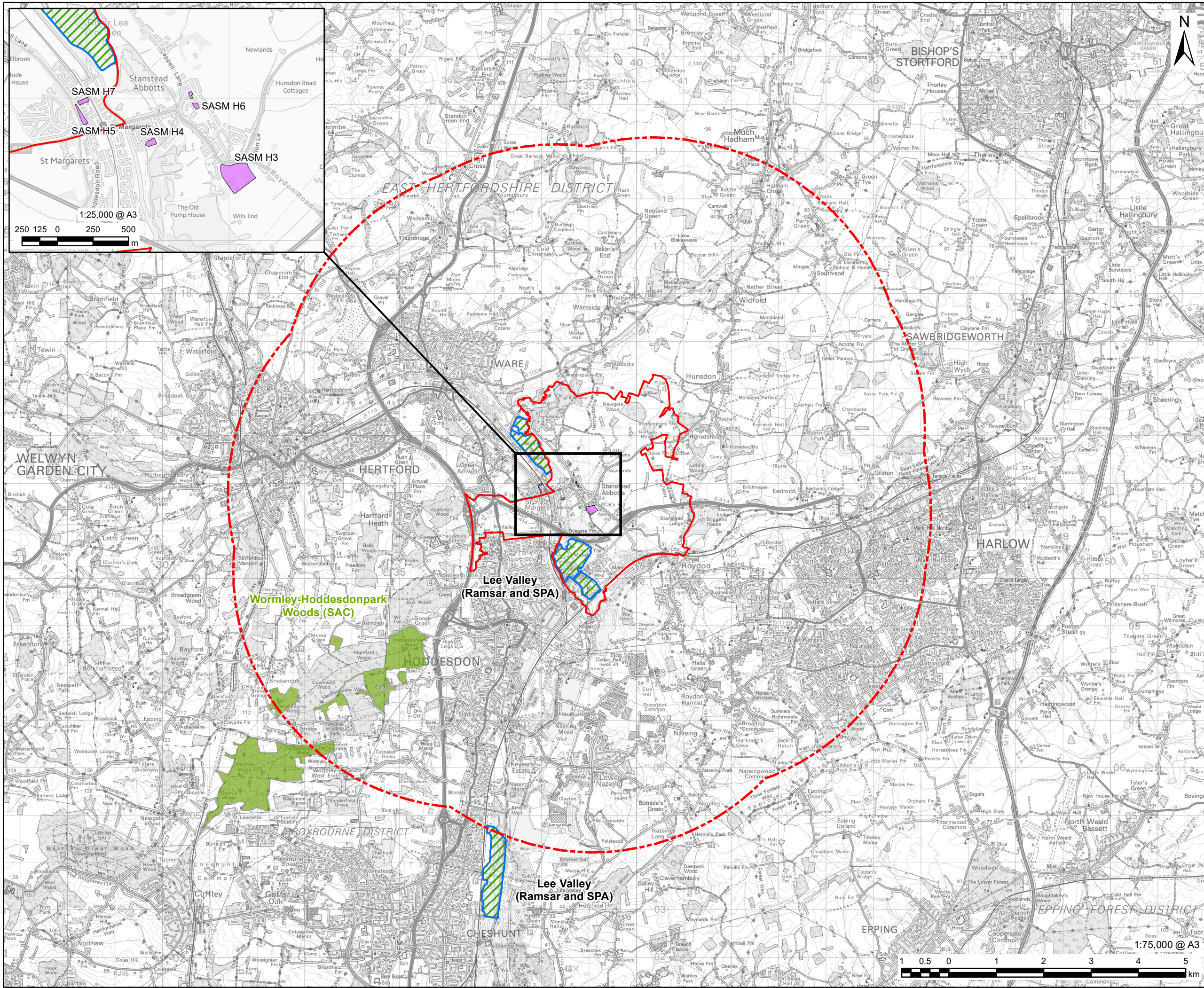
²⁶ Thames Water October 2018 Position Statement On Development In The Greater Harlow Area

6. Conclusions

- 6.1 This assessment undertook both Screening and Appropriate Assessment of the policies and the proposed allocations within the SASMNP.
- 6.2 The European site considered within the Appropriate Assessment for impact pathways that could not be screened out at the screening stage was:
 - Lee Valley SPA/Ramsar
- 6.3 Impact pathways considered during the screening were: hydrological changes, including changes in water quality; public access/ disturbance (including use of illicit vehicles) and air pollution - risk of atmospheric nitrogen deposition. Of these the following was taken through to Appropriate Assessment: hydrological changes, including changes in water quality
- 6.4 Eight policies were subject to Appropriate Assessment as they allocated development sites and specified housing numbers and were located within the accepted zones of influence of the aforementioned international sites and could result in adverse effects on the integrity of an international site both alone and in combination with other projects and plans.
- 6.5 Following Appropriate Assessment, it is concluded that, with the implementation of East Herts District Plan Policy WAT6, the Stanstead Abbots Neighbourhood Plan would contain sufficient policy framework to ensure no adverse effects on the integrity of European sites will occur in isolation or in combination with other projects and plans.
- 6.6 However, it is recommended that the SASMNP reflects this East Herts District plan policy by including a new policy to state that support for new dwellings is contingent on the delivery of housing keeping pace with upgrades to Rye Meads WwTW to ensure no adverse effect on the integrity of the SPA/Ramsar.

Appendix A Figures

A.1 Figure 1 – European sites



PROJECT
 Stanstead Abbots
 Neighbourhood Plan HRA

CLIENT
 Stanstead Abbots
 Neighbourhood Plan Group

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- LEGEND**
- Stanstead Abbots Neighbourhood Plan Area
 - 5km Buffer of the Neighbourhood Plan Area
 - Site Option
 - Ramsar
 - Special Area of Conservation (SAC)
 - Special Protection Area (SPA)

NOTES
 Note:
 Site Options have been indicatively drawn.

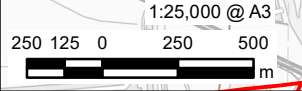
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ISSUE PURPOSE
 FINAL

PROJECT NUMBER
 60571087

FIGURE TITLE
 Stanstead Abbots Neighbourhood Plan in relation to European Sites

FIGURE NUMBER
 Figure 1



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