Stevenage Borough Local Plan 2011-2031

Appropriate Assessment: Screening Opinion

May 2016

Stevenage BOROUGH COUNCIL

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1 Non-technical summary

1.1 Stevenage Borough Council is writing its new Local Plan. The Local Plan will be used to decide whether to grant planning permission for new development within the Borough.

1.2 The new Local Plan says how much development will take place in Stevenage in the future and where it will go. The Local Plan covers the period until the year 2031 and says we will build at least 7,600 new homes in the Borough by this time.

1.3 We have to assess whether the Local Plan will harm certain types of wildlife habitats known as European Sites. These are protected by law. If the plan is likely to cause harm, the plan must go through a process called an Appropriate Assessment.

1.4 This report provides a screening opinion on the Local Plan for Stevenage. The screening opinion determines whether the Local Plan will have a likely significant effect, either alone or in-combination. This means it decides whether or not the Appropriate Assessment stage is required.

1.5 This screening report identifies one site that we should think about when preparing Stevenage's Local Plan. This site is the Lee Valley Special Protection Area (or SPA for short). We have identified this SPA because most of the sewage and wastewater from Stevenage is treated near to the site.

1.6 This SPA is protected because it is home to some rare types of bird. However, it could be affected if

- the quality of water gets worse;
- too much water is taken out (abstracted);
- human activities are not properly managed; or
- part(s) of the site is developed.

1.7 To help us understand whether the SPA will be affected, we have carried out a Water Cycle Study. A Water Cycle Study helps us to understand how much water that development in Stevenage will need. It also tells us how much waste water is likely to be produced and what we need to do to make sure it can be treated. This study was first carried out in 2009 and updated in 2015.

1.8 Most wastewater in Stevenage is currently treated at a sewerage treatments works called Rye Meads that is inside the SPA. It is important to make sure that Rye Meads can safely handle the waste water from Stevenage and other locations without harming the SPA.

1.9 The Borough Council have recently completed a review of the Rye Meads Water Cycle Strategy. This is a study which looks at the number of homes being planned across a wider area and the capacity of water infrastructure to accommodate this.

1.10 The study concludes that development targets are now substantially lower than when the original study was completed in 2009. It demonstrates that there should now be capacity at the Rye Meads Sewerage Treatment Works to accommodate new development until at least 2026 with a reasonable chance that it can accommodate development until the end of the plan period in 2031. These findings are supported by Thames Water, who are responsible for the collection and treatment of wastewater at Rye Meads, and the Environment Agency, who are responsible for regulating water quality.

1.11 Natural England was consulted on a draft screening report in September 2015. As a result of their feedback, a number of changes were made to this final report.

1.12 As a result of the screening process, the following changes have been made to the draft Local Plan:

The supporting text of draft Policy SP5 has been amended to include references to:

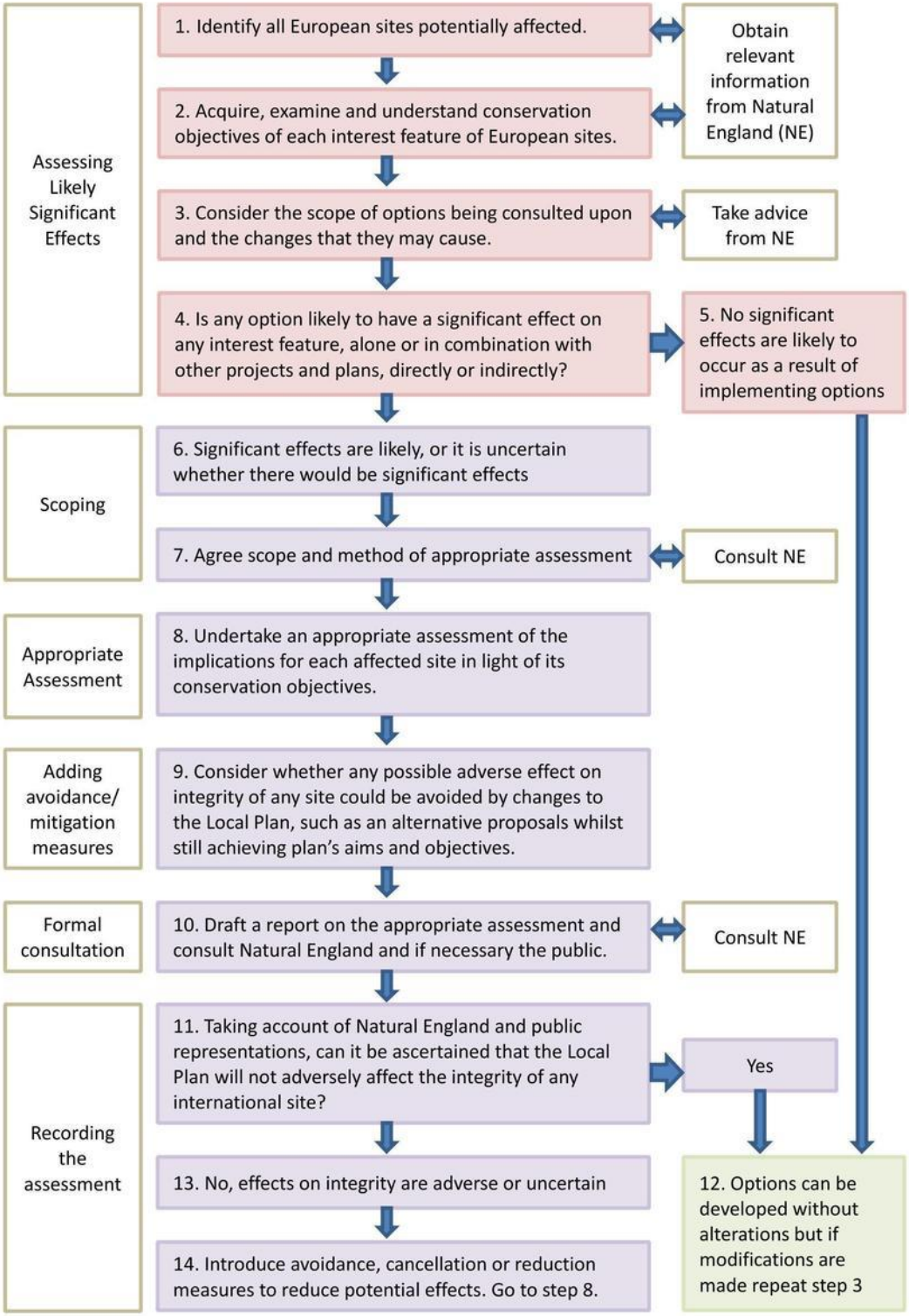
- The need for continued engagement to ensure any new infrastructure at Rye Meads can be delivered without causing harm;
- The need to take a 'safety first' (precautionary) approach to European sites;
- The possibility for increased recreational use of Rye Meads as a result of new development; and
- A co-ordinated approach to site management, including the potential use of contributions secured through the plan to deliver this.

1.13 Draft Policy IT3 requires significant development proposals to show how their infrastructure needs will be met. **The supporting text of draft Policy IT3 has been amended** to reflect the precautionary approach of the Habitats Directive. It identifies that measures may be taken to stop development coming forward until necessary infrastructure is provided.

1.14 This screening report identifies the Local Plans of other authorities near the European Site. It concludes that there are safeguards in place that will stop Stevenage's Plan having an adverse impact 'in combination' with the other Plans.

1.15 This screening opinion concludes that, with the inclusion of the changes above, the Local Plan for Stevenage is not likely to have a significant effect on a European Site, either alone or in combination.

Fig 1: Process of applying the Habitats Directive in relation to the development of the Local Plan



2 Introduction

2.1 Stevenage Borough Council is writing its new Local Plan. The policies in the Local Plan will be used decide whether to grant planning permission for development within the Borough. As part of this process, the emerging proposals in the Plan are subject to various assessments to ensure they will not have an unduly adverse impact.

2.2 The Habitats Directive[1] is one of the European Union's most important ways of securing wildlife and nature conservation. Among a number of requirements, it says that Local Planning Authorities must decide if their Plans will affect any protected European Sites. The requirements set out in the Habitats Directive have become part of UK law[2].

2.3 There are two types of European Site: Special Protection Areas (SPAs) and Special Areas of Conservation (SACs).

2.4 SPAs are identified for the protection of rare and vulnerable birds. They specifically aim to protect species that are defined in the EC Birds Directive[3]. The Joint Nature Conservancy Committee (JNCC) has published guidelines to assist in the selection of SPAs in the United Kingdom[4]. At the highest level, these suggest that SPAs should be identified where sites or habitats are used regularly by:

- 1% or more of the Great Britain (or in Northern Ireland, the all-Ireland) population of a species listed in the Birds Directive;
- 1% or more of the biogeographical population of a regularly occurring migratory species; or
- over 20,000 waterfowl or seabirds.

2.5 There are further discretionary guidelines to enable the identification of other sites.

2.6 SACs are those sites that will make a significant contribution to conserving the 189 habitats and 788 species identified in the Habitats Directive. The listed habitats and species are considered to be those most in need of conservation at the European level. This excludes birds which are protected through the designation of SPAs.

2.7 Sites that are being considered for protection are also included. SPAs often include important wetland sites known as Ramsars. Government planning guidance[5] says that Ramsars should be protected the same as SPAs and SACs. Because of this, Ramsars are included in any references to a 'European Site' in this report.

2.8 The Habitats Directive states that:

> *Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or*

[1] Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Directive)

[2] Conservation of Habitats and Species Regulations 2010 (SI2010 no.490).

[3] Council Directive 2009/147/EC on the conservation of wild birds.

[4] The Birds Directive: election guidelines for Special Protection Areas, http://jncc.defra.gov.uk/page-1405, accessed September 2015.

[5] Paragraph 118 of the National Planning Policy Framework

projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives[6]*.*

2.9 The Local Plan will not be directly connected with or necessary to the management of European Sites. It is therefore necessary to decide whether the new Local Plan is likely to have a significant effect on any European Sites.

2.10 This document provides a screening opinion on the need for Stevenage's new Local Plan to be subject to the Appropriate Assessment stage. It considers whether there are European Sites within, or within a reasonable proximity to, Stevenage. It assesses whether likely significant effects on these sites arising from the implementation of the Plan can reasonably be ruled out.

2.11 It determines whether the Plan, or any part of it, should be subject to more detailed assessment on the grounds of likely impacts. These impacts may arise from individual policies within the Plan or in combination with other policies and / or other plans or programmes being produced by other bodies.

2.12 The Borough Council have recently completed the Rye Meads Water Cycle Strategy Review (The WCS)[7]. This is a study which looks at the number of homes being planned across a wider area and the capacity of water infrastructure to accommodate this. It is based upon a study completed in 2009 examining the impact of then regional plan development targets[8].

2.13 The findings of the WCS have been developed in consultation with, and endorsed by, both Thames Water and the Environment Agency.

2.14 Given the nature of the issues raised in this screening report, the WCS should be read alongside this screening opinion. The WCS effectively discharges a number of the responsibilities of this screening report by giving consideration to future levels of development across the catchment area of the Rye Meads Sewerage Treatment Works.

2.15 Notwithstanding, this screening opinion follows a structure methodology and cross-refers to the WCS throughout as appropriate.

[6] Article 6(3) of the Directive

[7] Rye Meads Water Cycle Strategy Review (Stevenage Borough Council, 2015)

[8] Rye Meads Water Cycle Strategy (Hyder, 2009)

3 Guidance and Methodology

3.1 The European Commission published guidance on the implementation of the Habitats Directive, insofar as it relates to Appropriate Assessment, in 2000[9].This provides a detailed interpretation of the wording of the Directive.

3.2 The Government consulted on draft guidance explaining how Appropriate Assessment should be carried out in 2006[10]. This set out a four stage approach to Appropriate Assessment:

- Stage 1: Identify any sites that might be affected;
- Stage 2: Decide if the plan or project will harm the sites found in Stage 1. If it is determined at Stage 2 that there will be no harm, a screening opinion should be written to this effect. This should be sent to the relevant statutory authority for their agreement. If agreed, this marks the end of the process;
- Stage 3: If it cannot be proven that there will be no harm, an assessment should consider alternative options for solving the issues in the plan; and
- Stage 4: If there are no alternatives, it must be demonstrated that the plan is in the overriding public interest. This means that the benefits of the plan are so great they outweigh the harm to the site.

3.3 This guidance was never published in a finalised form and adopted. Further draft guidance was produced on behalf of Natural England, as the "relevant statutory body" referred to in Stage 2 above, in 2009. This has also not been adopted.

3.4 However, the authors of this latter draft have also produced (largely similar) guidance for Scottish Natural Heritage which has been adopted and updated. This sets out a 13-stage appraisal process covering both the screening and assessment stages[11].

3.5 A large number of Local Plans have now been subject to Appropriate Assessment. These reports are widely published as part of the evidence base. These various sources have been consulted upon to determine the most appropriate methodology.

3.6 Having regard to all of the above, this screening opinion follows a six-stage process. Each step is explained in turn in the following chapters:

- Identify any sites that might be affected (Section 4 of this document);
- Describe the identified site(s) (Section 5);
- Identify elements of the draft plan which might affect the European site(s) (Section 6);
- Identify other plans and projects which might affect the European site(s) (known as 'in combination' effects) (Section 7);
- Screening analysis (Section 8); and
- Conclusions (Section 9).

[9] Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC

[10] Appropriate Assessment of Plans (Scott Wilson; Levett-Therivel; Treweek Environmental Consultants and Land Use Consultants, 2006)

[11] http://www.snh.gov.uk/protecting-scotlands-nature/protected-areas/international-designations/natura-sites/hra-appropriate-assessment/, accessed September 2015

3.7 A draft of this report was sent to Natural England for comment in September 2015. Several issues were raised in response. Following further discussion and clarification with Natural England, a number of amendments have been made to this screening report.

4 Identify any sites that might be affected

4.1 The first stage in the process is to identify any European Sites which might be significantly affected by Stevenage's Local Plan. Appropriate Assessment is most likely to be required where European Sites are in or near the planning authority's boundaries. However, sites further afield should not necessarily be ruled out without first being subject to proper consideration.

4.2 Sites can be directly or indirectly affected. An example of a direct effect would be harming a site by building on or right next to it. An example of an indirect effect would be that new development increases demand for water. The increased use of water then affects a protected site.

4.3 The table below shows the possible impacts identified. It also shows how we these were initially used to decide how to identify sites that might be affected. There are other potential impacts and criteria which might be used elsewhere to identify sites and / or potential impacts under the Habitats Directive. These have not been included in Table 1 because they are not considered relevant to Stevenage's Local Plan (e.g. consideration of coastal impacts).

4.4 It is considered reasonable to conclude that sites which do not meet these selection criteria will generally not be significantly affected by Stevenage's Local Plan.

Table 1: Initial screening criteria for site selection

Type of impact	Description of impact	Criteria for identifying sites
Direct	Loss of or damage to a site, including loss of or damage to any species within it, as a result of development.	Sites within the Borough boundary.
Indirect	Damage to a site as a result of construction (such as noise or dust).	Sites within 10km of the Borough boundary.
	Increased use of a site for recreation because of a larger population.	
	Damage to a site as a result of increased water runoff, including effects on water quality.	
	Damage to a site as a result of increased traffic or air pollution.	
	Damage to a site as a result of increased demand on water, or other relevant, infrastructure.	Sites outside of the 10km buffer that contain or are adjacent to a water source, water treatment works or other relevant infrastructure that serves, or will be directly required to serve, Stevenage.

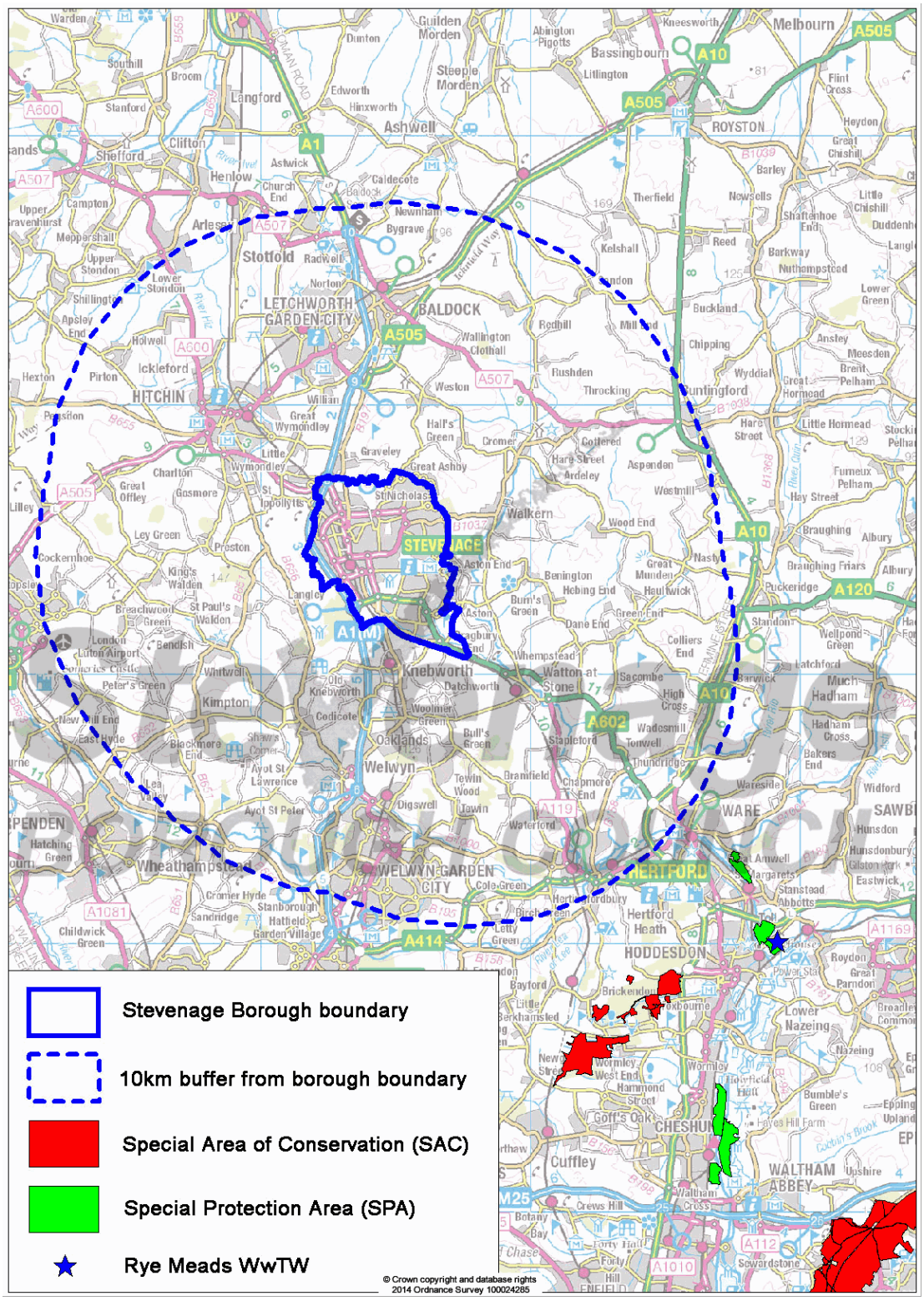
4.5 A search using these criteria is shown on the map on the next page. It shows that:

- There are no European Sites in the area covered by the Local Plan;
- There are no European Sites within a 10 kilometre (km) buffer of the Borough boundary; and
- There is one European Site outside of the 10km buffer that is next to a water treatment works which serves Stevenage. This site is also a Ramsar site which follows the same boundaries.

4.6 The one site identified is the Lee Valley SPA. The Rye Meads Sewerage Treatment Works (STW) is next to the SPA. All wastewater from Stevenage is currently treated at Rye Meads STW.

4.7 There are two other European Sites outside of the buffers identified in Table 1, but shown in Map 1. These are the Special Areas of Conservation at Wormley / Hoddesdon Park Woods and Epping Forest. It is not considered necessary to include these in the screening assessment for the reasons set out above.

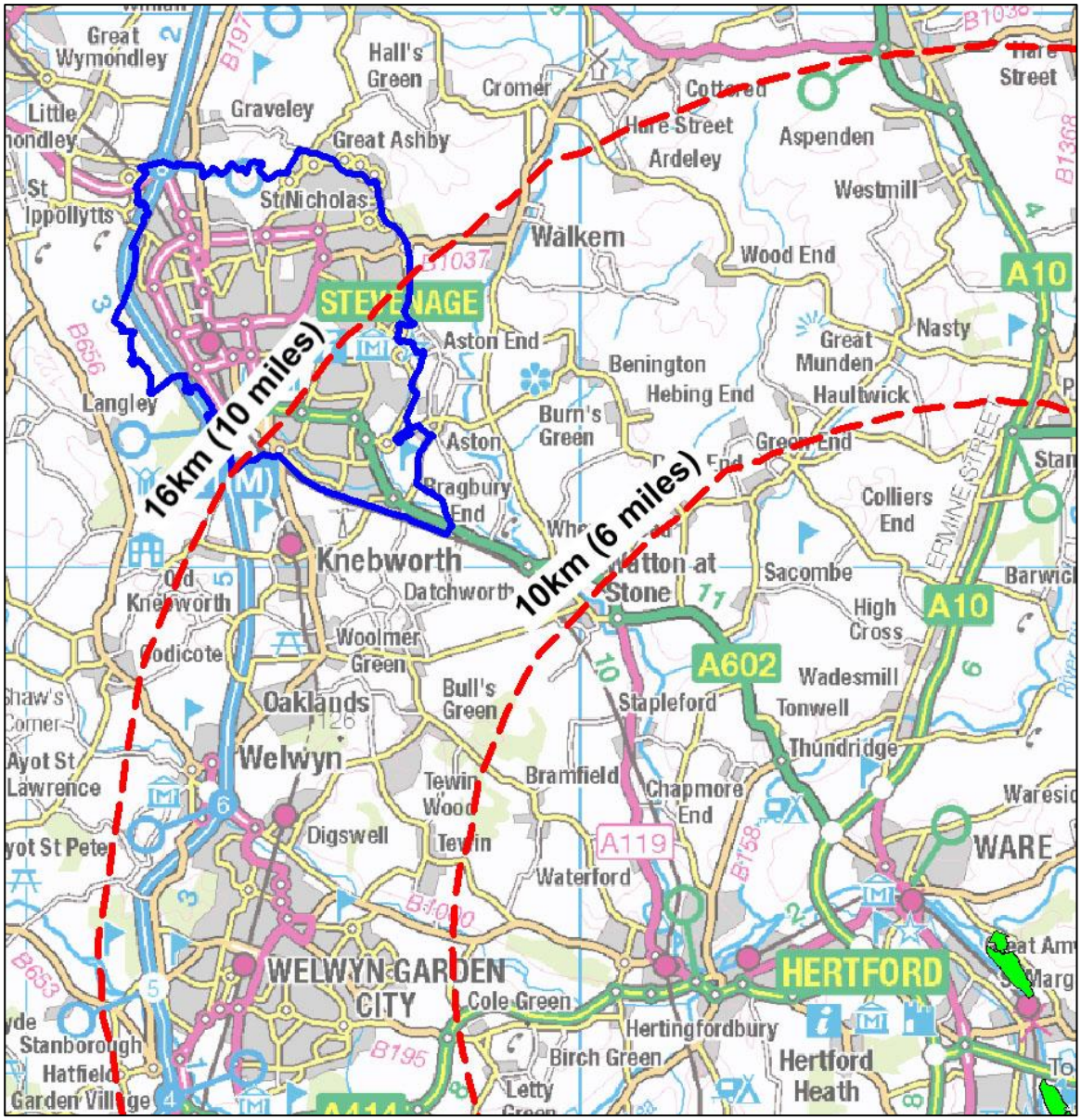
Map 1: Site search – European Sites



4.8 Following consultation, Natural England agreed there was a clear rationale in correctly identifying the Lee Valley SPA as the single European designated site that may be affected by the Stevenage Local Plan. They also advised that a precautionary approach should be taken with regard to site thresholds for potential recreational pressures.

4.9 Natural England has published survey data showing how people use the natural environment in England[12]. A review of this data shows that, within Hertfordshire, 9% of journeys to rivers, lakes or canals and 6% of journeys to country parks originate between 6 and 10 miles from their destination. 1% of journeys to rivers, lakes or canals and 6% of journeys to country parks originate between 11 and 20 miles from their destination[13]. Distance thresholds from the nearest point of the Lee Valley SPA to Stevenage are shown below.

Map 2: Distance thresholds from nearest point of SPA



[12] Monitor of Engagement with the Natural Environment (MANE), https://www.gov.uk/government/collections/monitor-of-engagement-with-the-natural-environment-survey-purpose-and-results

[13] Cumulative Y1 to Y5 March 2009 to February 2014, http://naturalengland.tns-global.com/Default.aspx

4.10 It can be seen that around one-third of Stevenage Borough lies within the 6-10 mile buffer. The remaining two-thirds lie within the 11-20 mile buffer. These distance thresholds also incorporate a number of other substantial settlements: Welwyn Garden City and Bishops Stortford also lie within the 6-10 mile radius while St Albans, Luton, Hitchin, Letchworth Garden City, Watford and large areas of suburban north London lie within the 11-20 mile buffer. As such, it is considered likely that only a minimal proportion of journeys to the SPA originate from within the Borough.

4.11 However, in the absence of specific, publically available visitor surveys for the Lee Valley SPA that might be used to (dis)prove this hypothesis, the advice of Natural England has been followed. Notwithstanding the 10km threshold initially used and the data above, the Lee Valley SPA is also identified on the basis of potential recreational use.

4.12 The most recent survey data published by Natural England for the period 2013-14[14] states that visits to the countryside show a declining trend; and that visits over 5 miles accounted for only 17% of all visits. If socio-economic status trends are carried over from previous years (2010-11), this percentage would decrease through the classes (i.e. DE percentage would be lower than the overall 17% stated.

4.13 The distance from central Stevenage to the Lee Valley SPA is upwards of 10 miles. Many of the recreational facilities at the Regional Park can also be found in Stevenage itself. Fairlands Valley Park facilities include 120 acres of parkland and an 11 acre sailing lake. Whilst not on the scale of the Regional Park, the facilities in Stevenage are of an appropriate scale to serve the residents of Stevenage insofar as they would not need to travel upwards of 10 miles for the same or similar activities.

[14] Monitor of Engagement with the Natural Environment (MANE), http://publications.naturalengland.org.uk/publication/6579788732956672?category=47018

5 Describing the identified European Site

5.1 The Lee Valley SPA covers more than 450 hectares of land. At its nearest point this SPA is 12km south-east of the Stevenage Borough boundary. The SPA covers four separate sections of the Lee Valley. The SPA stretches from Great Amwell near Ware to Walthamstow in London. It is approximately 26km from the most northerly point of the SPA to the most southerly point of the SPA.

5.2 The SPA is shown on the map on the next page.

5.3 The Rye Meads STW is (when viewed from north to south) adjacent to the second segment of the SPA. This part of the SPA covers 60 hectares. It is located to the east of Hoddesdon, approximately 15km south-east of the Stevenage Borough boundary.

5.4 The Natural England citation (reproduced in Appendix 1) states that the Lee Valley has been designated as an SPA because it is used by three protected bird species. These are northern Shoveler (*Anas Clypeata*), Gadwall (*Anas strepera*) and Great Bittern (*Botarus sterllaris*).

5.5 The European Site Conservation Objectives for the site are to:

Avoid the deterioration of the habitats of the qualifying features, and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive.

Subject to natural change, to maintain or restore:

- *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 populations of the qualifying features;*
- *The distribution of the qualifying features within the site.*

5.6 The Joint Nature Conservation Committee (JNCC) complete detailed citations for each protected site. The citation for the Lee Valley SPA is reproduced in Appendix 2.

5.7 This shows that 18% of the SPA is located in Essex, 40% in Greater London and the remaining 42% is in Hertfordshire. The habitat consists of

- Inland water bodies (67% cover);
- Improved grassland (10%);
- Broad-leaved deciduous woodland (10%);
- Humid or mesophile grassland (8%);
- Bogs, marshes, water fringed vegetation or fens (4%); and
- Other land (1%).

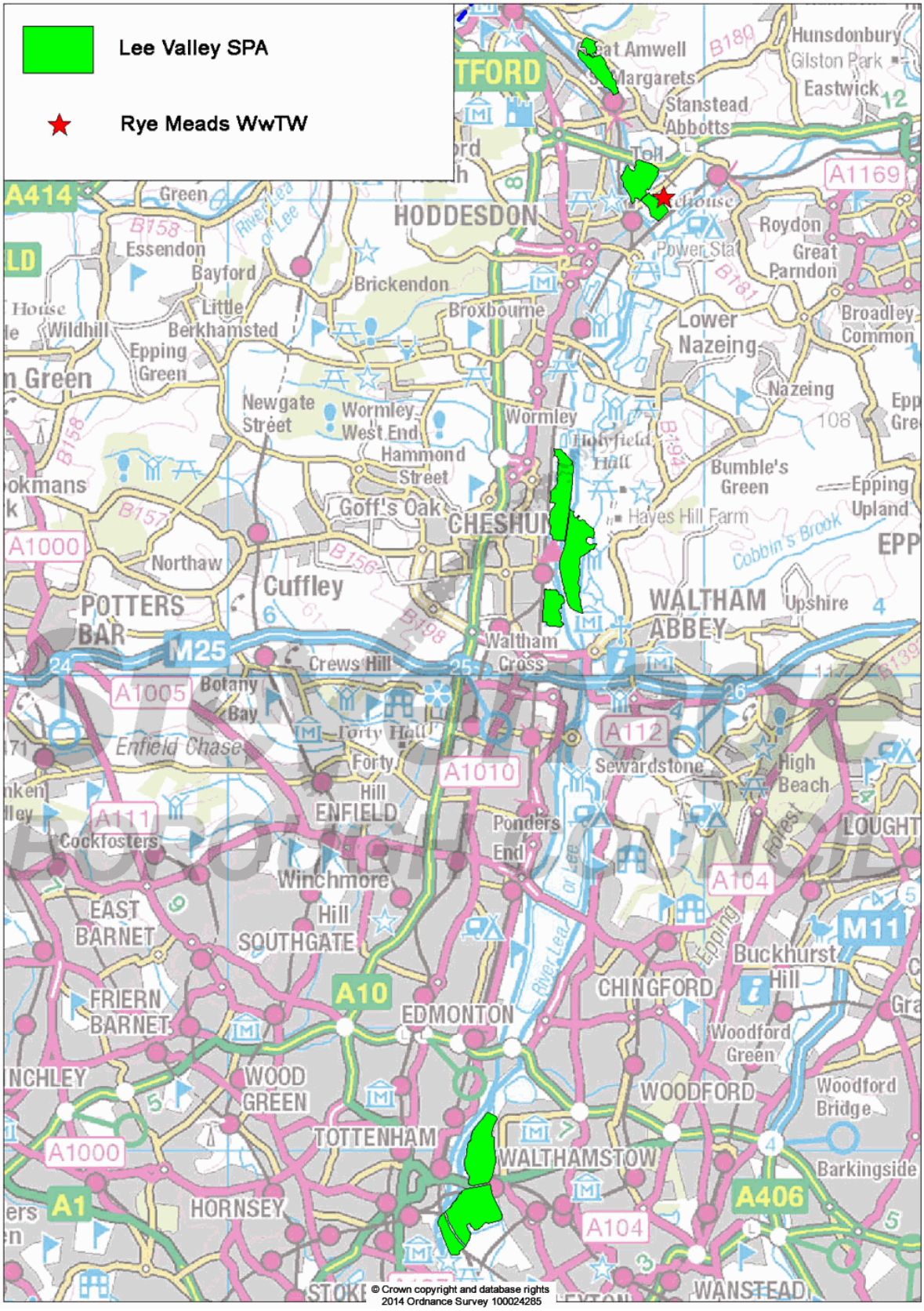
5.8 Of the three protected species, the SPA supports 6% of the Great Britain population of Great Bittern and, over the winter, 1% of the population of Shoveler and 1.5% of Gadwall.

5.9 The site is considered to be vulnerable to the following pressures:

- Poor water quality;

- Recreational activities such as walking or water sports;
- Taking out too much water for human use; and
- Urban development.

Map 3: The Lee Valley SPA



5.10 Natural England published a Site Improvement Plan for the Lee Valley SPA in 2014. This is reproduced at Appendix 3. The Plan summary identifies eight priority issues to be addressed:

- Water pollution
- Hydrological Changes
- Public access / disturbance
- Inappropriate scrub control
- Fish stocking
- Invasive species
- Inappropriate cutting and mowing: and
- Air pollution: risk of atmospheric nitrogen deposition.

5.11 These are supported by a more detailed action plan that sets out a series of specific measures, timescales and mechanisms.

Other designations affecting the Lee Valley SPA

5.12 More information can be ascertained by looking at other designations that affect the site. It is important to point out that these designations may have been made, in whole or in part, for different or additional reasons to the SPA. This report identifies the information that is most relevant to the SPA designation.

5.13 The whole of the SPA is also designated as a Ramsar site. The JNCC citation for the site is reproduced in Appendix 4. The Ramsar designation also protects Shoveler and Gadwall populations on the site. It is notable that the populations on which the Ramsar citation are based are higher than in the SPA designation. The Ramsar citation identifies that 1.9% of the national population of Shoveler and 2.6% of the population of Gadwall are accounted for by the Lee Valley site.

5.14 The Ramsar designation additionally cites the nationally scarce plant species whorled water-milfoil (*Myriophyllum verticillatum*) and a rare or vulnerable form of water-boatman (*Micronecta minutissima*).

5.15 Further survey data is also available[15].This shows that numbers of Gadwall have increased by 18% since classification:

> *Numbers of Gadwall over-wintering on Lee Valley SPA have been increasing long term. Consequently no Alerts have been triggered for this species. Numbers of this species over-wintering within Thames Region have been stable in the short-term having previously increased…The trend on the site appears to be tracking that of the region and British trends. The increasing proportion of regional numbers supported by this site suggest the environmental conditions remain relatively favourable and also indicates that this site is becoming increasingly important on a regional scale for this species.*

[15] Cook, A.S.C.P., Barimore, C., Holt, C.A., Read, W.J. & Austin, G.E. (2013). Wetland Bird Survey Alerts 2009/2010: Changes in numbers of wintering waterbirds in the Constituent Countries of the United Kingdom, Special Protection Areas (SPAs) and Sites of Special Scientific Interest (SSSIs). BTO Research Report 641. BTO, Thetford. http://www.bto.org/webs/alerts

5.16 By contrast, numbers of Shoveler are in decline. They have fallen by 32% since classification, triggering a 'medium alert':

> *Numbers of Shoveler over-wintering on Lee Valley SPA have been decreasing in the short-term having previously peaked. Consequently, Alerts have been triggered for the short- and medium-terms and the period since designation.. The trend on the site appears to be tracking that of the region although not the British trend. The declining proportion of the regional numbers supported by this site suggest that site-specific pressures may be affecting this species.*

5.17 Great Bittern have not been evaluated as part of this survey.

5.18 The whole of the SPA is also nationally protected as a Site of Special Scientific Interest (SSSI). The SPA is covered by four separate SSSI designations:

- The northernmost portion of the SPA, to the north of Stanstead Abbotts is the Amwell Quarry SSSI;
- The area adjacent to the STW is the Rye Meads SSSI;
- The area to the east of Cheshunt is the Turnford & Cheshunt Pits SSSI; while
- The southernmost portion of the SPA, to the west of Walthamstow, is the Walthamstow Reservoirs SSSI.

5.19 Although SSSI level notified features and condition assessments can assist in providing an indication of the types of impacts that may be significant for a site, they may not cover all potential impacts of the site as a whole and were not written to inform conclusions on adverse effects on the site integrity of the SPA.

5.20 Notwithstanding this point, it is considered that information relating to the SSSIs within the Lee Valley SPA provide useful context, especially given the geographically fragmented nature of the European Site.

5.21 At this stage, the Rye Meads SSSI is considered to be the area of most relevance to Stevenage's Local Plan and this screening report. This is because most wastewater from Stevenage is treated at Rye Meads whilst the SSSI is also a RSPB nature reserve with associated facilities –parking, visitor centre, marked trails and hides – making it potentially more likely to attract visitors over a greater distance.

5.22 The Rye Meads SSSI is split into six units. This is shown on the map on the following page. Detailed technical information on the SSSI is provided in Appendix 4. This information helps to identify what is considered of particular importance in this part of the SPA. By comparison, the information on the SPA and Ramsar detailed above and in the appendices relate to the whole site and do not clearly distinguish between the different parts of the site, even though they are geographically separated from one another.

5.23 Units 1, 2, 5 and 6 of Rye Meads SSSI provide reed beds, fens and wet grassland. This is recognised as important habitat for overwintering Bittern. Units 3, 4, and 5 contain open water habitats with favourable populations of, inter alia, Gadwall and Shoveler. This is notable in light of the apparent decline of Shoveler across the SPA as a whole.

5.24 Units 1, 2 and 6 are considered to be in 'favourable' condition. Units 3, 4 and 5 are considered to be in 'unfavourable recovering' condition. However, further analysis shows that this is largely due to issues with the populations of tufted duck and common tern. Although important in their own right,

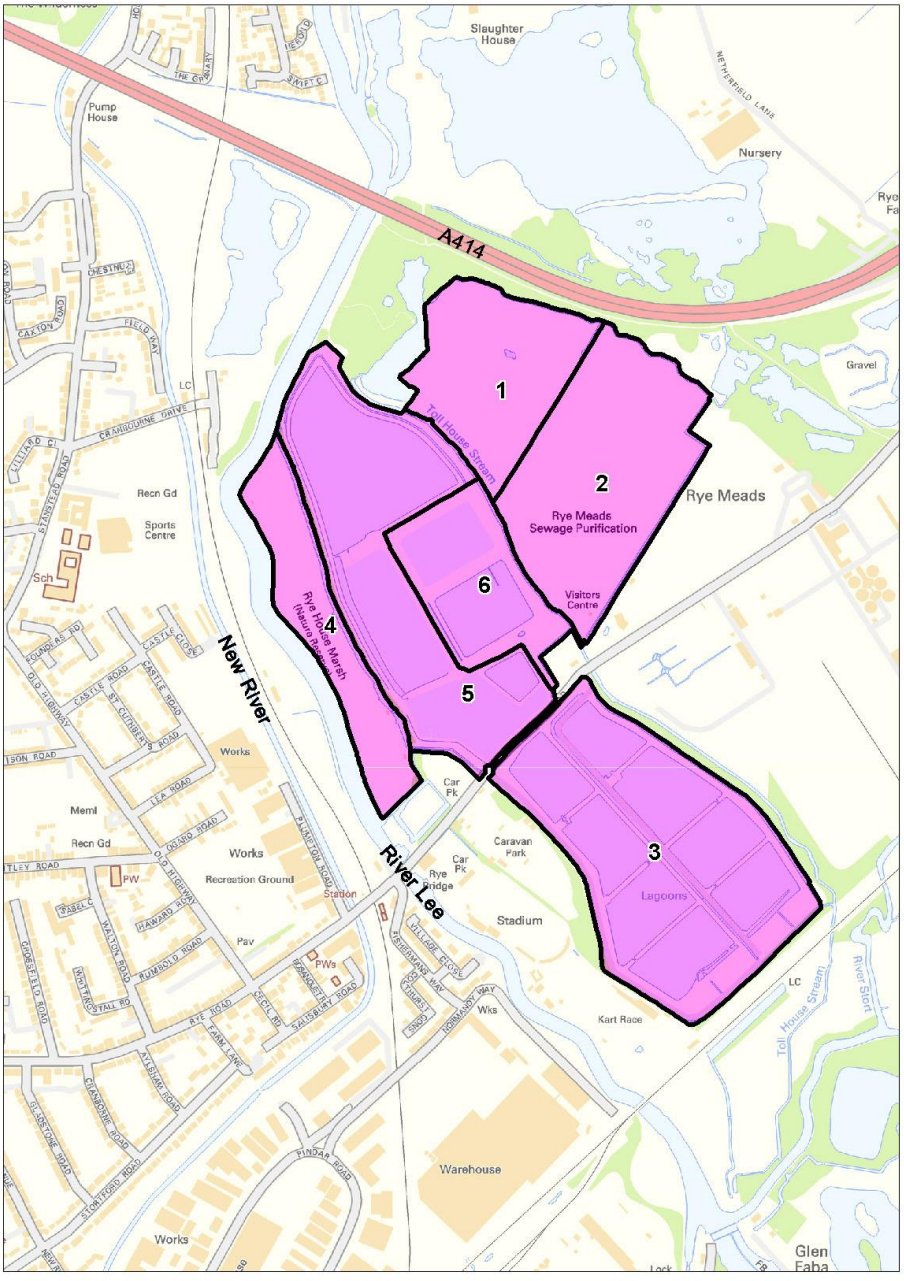
these species do not form the basis for the area's recognition as an SPA and therefore fall outside the remit of the Habitats Directive and any Appropriate Assessment.

5.25 The analysis of the SSSI says that water quality and levels of the open water habitats should be sympathetically managed. The wet grasslands need to be actively managed to maintain their conservation interest. Access and recreational activities may also need to be managed.

5.26 Notwithstanding the comments in paragraph 5.21, it is considered important at this stage to develop a basic understanding of the other SSSIs as these also form part of the SPA.

5.27 The Amwell Quarry SSSI is upstream of Rye Meads. It should therefore not be affected by the operation of the STW. It is closer to the Borough boundary than the Rye Meads SSSI and perhaps more likely to attract visitors from Stevenage in pure distance terms. However, this needs to be offset against its lower profile – it is a county wildlife site.

Map 4: Rye Meads SSSI



5.28 Those sections of the SPA at Turnford & Cheshunt Pits and Walthamstow Reservoirs lie downstream of the Rye Meads STW and are therefore potentially susceptible to any adverse impacts on, for example, water quality which could arise at Rye Meads. This issue is considered of greater, albeit still limited, potential relevance to the first of these sites as Walthamstow Reservoirs lie some distance from Rye Meads and also downstream of the (larger) Deephams STW which serves north London and surrounding areas.

5.29 The distance of these from the Borough, and the dense population accommodated in the more immediate catchment, makes it highly unlikely that visitors from Stevenage will form more than a *de minimis* proportion of overall numbers.

5.30 Table 2 summarises the key features of the SSSIs within the SPA, insofar as they relate to the European designation.

5.31 It can be seen from the table that a significant presence of all three species for which the SPA has been designated has been recorded in three of the four SSSIs. The exception is the Walthamstow Reservoirs SSSI for which only a nationally significant presence of Shoveler is identified (this is not to say that the other two species are not present). The management issues for each of the SSSIs are broadly the same.

Conclusions

5.32 Analysis of available information on the European Site identifies that the presence of three species – Gadwall, Shoveler and Great Bittern – form the basis of the SPA designation. A range of management issues and actions have been identified for the site.

5.33 Species management – including recommendations for issues such as grazing, cutting, maintenance of habitat and the control of invasive species – are issues *directly connected with or necessary to the management of the site*, as per the wording of the Habitats Directive. They do not fall to be considered in this screening opinion.

5.34 In relation to Stevenage's Local Plan, consideration of **water quality and levels** is the most important factor to be considered in this screening opinion. All wastewater from Stevenage currently drains to Rye Meads. These factors are most likely to be affected by the operation of the Rye Meads STW and connecting infrastructure from Stevenage.

5.35 **Recreational access and human activity** are identified as management issues across the SPA as a whole as well as all four subsidiary SSSIs. Although, the SPA lies outside a 10km buffer of the Borough boundary, a precautionary approach has been taken, following advice from Natural England.

5.36 Large parts of the Rye Meads SSSI form an RSPB reserve that is open to the general public and, given its status, may be more likely to attract visitors over medium distances than other parts of the SPA. Given its relative proximity to Stevenage – the second closest of the four SPA 'parcels' – this area is perhaps most susceptible. The Amwell Quarry SSSI should also be considered as the closest element of the SPA to the Borough boundary.

5.37 Given their distance from Stevenage, and their location in, or adjacent to, north London surrounded by a dense suburban population, it is not considered that visitor numbers from Stevenage are likely to have any more than a *de minimis* impact.

Table 2: Summary features of SSSIs within the SPA

SSSI	Main Habitat(s)	Significant presence of…			Condition	Management issues	Notes
		Bittern	Shoveler	Gadwall			
Amwell Quarry	Standing open water and canals	Yes	Yes	Yes	100% favourable	Water quality and levels, species management, human activity	
Rye Meads	Fen, marsh, swamp lowland, standing open water and canals	Yes	Yes	Yes	40% favourable 60% unfavourable recovering	Water quality and levels, species management, human activity	Favourable populations of Shoveler and Gadwall. Habitat in favourable condition for supporting Bittern. Unfavourable condition relates to species (common tern, tufted duck) which are not relevant to SPA designation.
Turnford & Cheshunt Pits	Standing open water and canals	Yes	Yes	Yes	100% favourable	Water quality and levels, species management, human activity	Populations of all three species for which the SPA is designated considered favourable.
Walthamstow Reservoirs	Standing open water and canals	No	Yes	No	100% unfavourable recovering	Water quality and levels, species management, human activity	Shoveler counts considered favourable. Unfavourable condition relates to species (Heron) which are not relevant to SPA designation.

Source: Summarised from Natural England SSSI Information, http://www.sssi.naturalengland.org.uk/Special/sssi/search.cfm

6 Relevant elements of the draft plan

6.1 It has been established in Section 4 of this report that the only European Site that falls to be considered in this screening opinion is the Lee Valley SPA. This has primarily been identified because of the proximity of the Rye Meads STW which treats wastewater from Stevenage. That part of the SPA coinciding with the Rye Meads SSSI is considered to be of most relevance.

6.2 Following analysis of the identified European Site in Section 5, the potential for Stevenage's Local Plan to impact upon water quality and levels within the SPA has been identified as the key issue.

6.3 Recreational pressure is a secondary influence on the selection of this site. Notwithstanding their distance from the Borough boundary, those parts of the SPA coinciding with the Amwell Quarry and Rye Meads SSSIs are considered to be of most relevance.

6.4 The next stage of the process requires relevant elements of Stevenage's draft Local Plan which might affect a European Site to be identified.

6.5 Policies which are intended to protect the environment – such as designations of protected open space – would not be likely to have a significant effect on a European Site as they seek to maintain or enhance pre-existing features. These policies can be 'screened out' of the process at an early stage. Similarly, those policies relating to design and other Qualitative and detailed or detailed criteria can be 'screened out' as they do not, in themselves, lead to development; they only apply once the principal of development has been accepted through other policies[16].

6.6 It can therefore be established at an early stage that only those policies which proactively support additional development might be captured by the requirements of the Directive.

6.7 The WCS identifies that almost all of Stevenage Borough lies within Thames Water's operational area. The exception being a small area at the north-west of the Borough within Anglian Water's operational area. The WCS confirms that there is a commercial arrangement between the providers which sees water from this area pumped across the catchment boundary and treated by Thames; the whole of Stevenage is served by Thames Water.

6.8 The future modelling in that study is undertaken on the premise that this arrangement will continue in the future. Furthermore, it confirms that Rye Meads is presently the only STW serving Stevenage.

6.9 Policies relating to the distribution of residential development and individual allocations within Stevenage can therefore be 'screened out' in terms of impacts upon water qualities and levels. It is established that the whole of the Borough, and by extension all future development sites that will be identified in the Local Plan, lie outside the 10km threshold identified while the WCS' starting point assumption is that all development in Stevenage will be served by Rye Meads regardless of its precise location within the Borough.

6.10 It is considered that a similar approach can be taken in terms of recreational pressures. Although the Borough lies across the threshold between the 6-10 mile and 10-20 mile buffers identified above (*see* Section 4), these are relatively arbitrary distinctions. Given the low proportion of recreational trips to the SPA that might reasonably be assumed to originate from Stevenage and the relatively small size

[16] This is the approach advocated through the Scottish guidance referred to in Section 3 and widely adopted by English Local Planning Authorities in their own screening opinions.

of the Borough, it is not considered that decisions on the location of development are likely to have materially different outcomes in terms of likely effects.

6.11 The WCS further establishes the assumption that wastewater demand from non-residential premises is held constant over the plan period. This, in turn, carries forward the assumption set in the original 2009 study which cited the replacement of water-intensive companies with service-orientated industry and that fact that Thames Water are under no obligation to accept new trade flows.

6.12 Policies relating to non-residential development have also been screened out as it is an assumption for the purposes of development planning, accepted by both the Environment Agency and Thames Water, that they will not impact upon the Rye Meads STW. Non-residential development is not considered to have an effect in relation to recreational pressures.

6.13 The table on the following pages summarises this process for the policies of the draft plan. It can be seen that the significant majority of policies have been screened out on the basis of the analysis above.

6.14 From this process, it is concluded that the overall quanta of residential development being considered by the Plan, and the associated need to provide any additional wastewater infrastructure, remain as the only factors which fall to be considered in this screening opinion.

6.15 The impacts of the following draft policies will need to be considered in more detail:

- Policy SP5: Infrastructure
- Policy SP7: High Quality Homes

6.16 Although screened out as a 'protective' policy, the wording and supporting text of the following policy should also be considered. This will help to determine whether it (either as is or as amended following this process) might assist in determining whether Stevenage's draft Local Plan is likely to have a significant effect:

- Policy IT3: Infrastructure.

Table 3: Screening of draft Local Plan policies

Draft local plan policy	Promotes the Principal of Development?	Residential (ancillary) Development?	Screened in / out	Reason(s)
Part II – Strategic Policies				
Policy SP1: Presumption in favour of sustainable development	No	No	Out	Qualitative and detailed criteria and / or general principles
Policy SP2: Sustainable Development in Stevenage	No	No	Out	Qualitative and detailed criteria and / or general principles
Policy SP3: A strong, competitive economy	Yes	No	Out	Whilst promoting development, relates to non-residential development - ruled out in accordance with Thames Water assumptions
Policy SP4: A Vital Town Centre	Yes	No	Out	Whilst promoting development, relates to non-residential development - ruled out in accordance with Thames Water assumptions
Policy SP5: Infrastructure	Yes	Yes	**In**	**Makes provision for additional utilities infrastructure**
Policy SP6: Sustainable transport	No	No	Out	Qualitative and detailed criteria / non-residential development - ruled out in accordance with Thames Water assumptions
Policy SP7: High Quality Homes	Yes	Yes	**In**	**Sets overall quantum of residential development**
Policy SP8: Good design	No	No	Out	Qualitative and detailed criteria / protection of environment [water efficiency]
Policy SP9: Healthy Communities	No	No	Out	Relates to non-residential development - ruled out in accordance with Thames Water assumptions
Policy SP10: Green Belt	No	No	Out	Preservation / restricts development
Policy SP11: Climate change, flooding and pollution	No	No	Out	Protects the environment
Policy SP12: Green Infrastructure and the natural environment	No	No	Out	Protects the environment
Policy SP13: The historic environment	No	No	Out	Qualitative and detailed criteria and / or general principles -
Part III – Detailed Policies				
Policy EC1: Allocated Sites for Employment Development	Yes	No	Out	Relates to non-residential development - ruled out in accordance with Thames Water assumptions

Draft local plan policy	Promotes the Principal of Development?	Residential (ancillary) Development?	Screened in / out	Reason(s)
Policy EC2: Gunnels Wood Employment Area and Edge-of-Centre Zone	Yes	No	Out	Relates to non-residential development - ruled out in accordance with Thames Water assumptions
Policy EC3: Gunnels Wood Industrial Zones	Yes	No	Out	Relates to non-residential development - ruled out in accordance with Thames Water assumptions
Policy EC4: Remainder of Gunnels Wood	Yes	No	Out	Relates to non-residential development - ruled out in accordance with Thames Water assumptions
Policy EC5: Active frontages and gateways	No	No	Out	Qualitative and detailed criteria
Policy EC6: Pin Green Employment Area	Yes	No	Out	Relates to non-residential development - ruled out in accordance with Thames Water assumptions
Policy EC7: Employment development on unallocated sites	Yes	No	Out	Relates to non-residential development - ruled out in accordance with Thames Water assumptions
Policy TC1: Town Centre	No	No	Out	Qualitative and detailed criteria
Policy TC2: Southgate Major Opportunity Area	Yes	Yes	Out	Location of residential development / relates to non-residential development. Numbers are more important than location (numbers of dwellings covered by SP7
Policy TC3: Central West Major Opportunity Area	Yes	Yes	Out	Location of residential development / relates to non-residential development. Numbers are more important than location (numbers of dwellings covered by SP7
Policy TC4: Station Gateway Major Opportunity Area	Yes	Yes	Out	Location of residential development / relates to non-residential development. Numbers are more important than location (numbers of dwellings covered by SP7
Policy TC5: Central Core Major Opportunity Area	Yes	Yes	Out	Location of residential development / relates to non-residential development. Numbers are more important than location (numbers of dwellings covered by SP7
Policy TC6: Northgate Major Opportunity Area	Yes	Yes	Out	Location of residential development / relates to non-residential development. Numbers are more important than location (numbers of dwellings covered by SP7

Draft local plan policy	Promotes the Principal of Development?	Residential (ancillary) Development?	Screened in / out	Reason(s)
Policy TC7: Marshgate Major Opportunity Area	Yes	Yes	Out	Location of residential development / relates to non-residential development. Numbers are more important than location (numbers of dwellings covered by SP7
Policy TC8: Town Centre Shopping Area	No	No	Out	Relates to non-residential development / Qualitative and detailed criteria - ruled out in accordance with Thames Water assumptions
Policy TC9: High Street Shopping Area	No	No	Out	Relates to non-residential development / Qualitative and detailed criteria - ruled out in accordance with Thames Water assumptions
Policy TC10: Opportunity areas within the Primary Shopping Areas	No	No	Out	Relates to non-residential development / Qualitative and detailed criteria - ruled out in accordance with Thames Water assumptions
Policy TC11: New Convenience Retail Provision	Yes	No	Out	Relates to non-residential development / Qualitative and detailed criteria - ruled out in accordance with Thames Water assumptions
Policy TC12: New Comparison Retail Provision	Yes	No	Out	Relates to non-residential development - ruled out in accordance with Thames Water assumptions
Policy TC13: Retail impact assessments	No	No	Out	Qualitative and detailed criteria
Policy IT1: Strategic development access points	No	No	Out	Does not directly lead to additional residential development
Policy IT2: West of Stevenage safeguarded corridors	No	No	Out	Does not directly lead to additional residential development
Policy IT3: Infrastructure	Yes	No	Out	Protect environment
Policy IT4: Transport assessments and travel plans	No	No	Out	Qualitative and detailed criteria
Policy IT5: Parking and access	No	No	Out	Qualitative and detailed criteria
Policy IT6: Sustainable transport	No	No	Out	Qualitative and detailed criteria
Policy IT7: New and improved links for pedestrians and cyclists	No	No	Out	Qualitative and detailed criteria
Policy IT8: Public parking provision	No	No	Out	Qualitative and detailed criteria
Policy HO1: Housing allocations	Yes	Yes	Out	Location of residential development. Numbers are more

Draft local plan policy	Promotes the Principal of Development?	Residential (ancillary) Development?	Screened in / out	Reason(s)
				important than location (numbers of dwellings covered by SP7
Policy HO2: Stevenage West	Yes	Yes	Out	Location of residential development. Numbers are more important than location (numbers of dwellings covered by SP7
Policy HO3: North of Stevenage	Yes	Yes	Out	Location of residential development. Numbers are more important than location (numbers of dwellings covered by SP7
Policy HO4: South East of Stevenage	Yes	Yes	Out	Location of residential development. Numbers are more important than location (numbers of dwellings covered by SP7
Policy HO5: Windfall Sites	Yes	Yes	Out	Location of residential development. Numbers are more important than location (numbers of dwellings covered by SP7
Policy HO6: Redevelopment of existing homes	Yes	Yes	Out	Location of residential development. Numbers are more important than location (numbers of dwellings covered by SP7
Policy HO7: Affordable housing targets	No	No	Out	Qualitative and detailed criteria
Policy HO8: Affordable housing tenure, mix and design	No	No	Out	Qualitative and detailed criteria
Policy HO9: House types and sizes	No	No	Out	Qualitative and detailed criteria
Policy HO10: Sheltered and supported housing	Yes	Yes	Out	Qualitative and detailed criteria. Dwelling numbers are covered by SP7
Policy HO11: Accessible housing	No	No	Out	Qualitative and detailed criteria
Policy HO12: Gypsy and traveller provision	Yes	Yes	Out	Location of residential development. Dwelling numbers are covered by SP7
Policy HO13: Gypsy and traveller provision on unallocated sites	Yes	Yes	Out	Location of residential development. Dwelling numbers are covered by SP7
Policy GD1: High Quality Design	No	No	Out	Qualitative and detailed criteria
Policy HC1: District, local and neighbourhood centres	No	No	Out	Relates to non-residential development - ruled out in accordance with Thames Water assumptions
Policy HC2: Local shops	No	No	Out	Relates to non-residential development - ruled out in accordance with Thames Water assumptions

Draft local plan policy	Promotes the Principal of Development?	Residential (ancillary) Development?	Screened in / out	Reason(s)
Policy HC3: The Health Campus	Yes	No	Out	Relates to non-residential development - ruled out in accordance with Thames Water assumptions
Policy HC4: Existing health, social and community facilities	No	No	Out	Relates to non-residential development - ruled out in accordance with Thames Water assumptions
Policy HC5: New health, social and community facilities	Yes	No	Out	Relates to non-residential development - ruled out in accordance with Thames Water assumptions
Policy HC6: Existing leisure and cultural facilities	No	No	Out	Relates to non-residential development - ruled out in accordance with Thames Water assumptions
Policy HC7: New and refurbished leisure and cultural facilities	Yes	No	Out	Relates to non-residential development - ruled out in accordance with Thames Water assumptions
Policy HC8: Sports facilities in new developments	No	No	Out	Relates to non-residential development - ruled out in accordance with Thames Water assumptions
Policy HC9: Former Barnwell East secondary school	No	No	Out	Relates to non-residential development - ruled out in accordance with Thames Water assumptions
Policy HC10: Redundant school sites	No	No	Out	Relates to non-residential development - ruled out in accordance with Thames Water assumptions
Policy GB1: Green Belt	No	No	Out	Preservation / restricts development
Policy GB2: Green Belt settlements	Yes	No	Out	Restricts development / location of residential development
Policy FP1: Renewable energy and energy efficiency	No	No	Out	Qualitative and detailed criteria
Policy FP2: Flood storage reservoirs and Functional Floodplain	No	No	Out	Protects the environment
Policy FP3: Flood Risk in Flood Zones 2 and 3	No	No	Out	Protects the environment
Policy FP4: Flood Risk in Flood Zone 1	No	No	Out	Protects the environment
Policy FP5: Contaminated Land	No	No	Out	Qualitative and detailed criteria

Draft local plan policy	Promotes the Principal of Development?	Residential (ancillary) Development?	Screened in / out	Reason(s)
Policy FP6: Hazardous Installations	No	No	Out	Qualitative and detailed criteria
Policy FP7: Light and Noise Pollution	No	No	Out	Qualitative and detailed criteria
Policy FP8: Pollution Sensitive Uses	No	No	Out	Qualitative and detailed criteria
Policy NH1: Principal Open Spaces	No	No	Out	Protects the environment
Policy NH2: Wildlife Sites	No	No	Out	Protects the environment
Policy NH3: Green Corridors	No	No	Out	Protects the environment
Policy NH4: Green links	No	No	Out	Protects the environment
Policy NH5: Trees and woodland	No	No	Out	Protects the environment
Policy NH6: General protection for open space	No	No	Out	Protects the environment
Policy NH7: Open space standards	No	No	Out	Qualitative and detailed criteria
Policy NH8: North Stevenage Country Park	No	No	Out	Protects the environment
Policy NH9: Areas of Archaeological Significance	No	No	Out	Qualitative and detailed criteria
Policy NH10: Conservation Areas	No	No	Out	Qualitative and detailed criteria

7 Identification of other relevant plans and programmes

7.1 The Habitats Directive requires authorities to consider whether their plans will have a significant effect upon a European site, either alone or in combination with other plans or projects.

7.2 The in-combination test cannot reasonably be expected to include the possible effects of projects not yet applied for or plans that have not yet been prepared. This may mean that the first plan, or a plan which occurs relatively early in a sequence of plans, is not subject to the same in-combination tests as later plans. Furthermore, in-combination effects are considered only insofar as they relate to the sites and factors which are considered of relevance to Stevenage's local plan.

7.3 This is the situation that Stevenage Borough Council finds itself in. East Herts, North Herts, Broxbourne, Welwyn Hatfield, Epping Forest and Harlow are all in earlier stages of their Plan development. As such, we are unable to assess their Plans as part of the in-combination effects that our Plan may have on the Lee Valley SPA. It would be for those authorities to assess the in-combination effect that their Plan and ours would have on the SPA.

Statutory planning documents within London

7.4 No London Boroughs are served by Rye Meads STW. However, a number of authority areas are served, in part, by the Deephams STW in Edmonton. This lies approximately 10 miles downstream of Rye Meads. The works discharge into Salmons Brook, a tributary of the River Lee. Deephams is not within the SPA. It is approximately 2 miles upstream of the Walthamstow Reservoirs SSSI, which forms the southernmost portion of the European Site.

7.5 Given the distance between the works and the fact that Deephams itself is not physically located within the SPA, it is considered highly unlikely that the land-use plans of authorities in its catchment would lead to in-combination effects. However, to ensure a comprehensive approach, they have been considered.

7.6 Strategic policies for the London Boroughs are set through the London Plan. Further Alterations to the London Plan (FALP) were published in March 2015 and became part of the statutory development plan for London.

7.7 A Screening Report for FALP was published in December 2013. This concluded that FALP would not introduce any significant effects which had not already been identified or mitigated against with a 2009 Habitats Regulations Assessment into the full London Plan[17].

7.8 It recognises that the increased housing numbers proposed by FALP should be subject to further investigation in the plans of the individual London Boroughs. Five London Boroughs lie partly within Deepham's catchment area. Table 3 summarises the plan-making situation in these areas.

[17] https://www.london.gov.uk/priorities/planning/london-plan/draft-further-alterations-to-the-london-plan, accessed October 2015

Table 4: Plan-making in London Boroughs within Deephams STW catchment

Borough	Current plan status	HRA completed?	Revised plan published since FALP?
LB Barnet	Adopted Core Strategy (2012)	Yes No significant effects	No
LB Enfield	Adopted Core Strategy (2010)	Yes No significant effects	No
LB Haringey	Adopted Local Plan: Strategic Policies (2013)	Yes No significant effects	No
LB Redbridge	'Preferred Options' consultation 2013	Yes No significant effects	No
LB Waltham Forest	Adopted Core Strategy (2012)	Yes No significant effects	No

Source: Local authority websites

7.9 It can be seen that all of the relevant London authorities have previously completed screening reports to satisfy the requirements of the Habitats Directive. They all conclude that the emerging strategic proposals would not have likely significant effects due, in part or in whole, to the measures already incorporated within the plan to avoid any adverse impacts. All the reports consider 'in combination effects'.

7.10 Furthermore, none of the authorities have published plans to accommodate the revised housing targets set in FALP. In that respect, the provisions of paragraph 7.2 are considered to apply as Stevenage cannot be required to consider the effects of plans which may be prepared in the future.

7.11 In light of the various factors outlined above, it is not considered necessary to include statutory land-use planning documents within London in the consideration of in-combination effects. This finding is supported by Natural England.

Other statutory planning documents outside London

7.12 Rye Meads STW does not just serve Stevenage. There are seven districts lying either entirely or partly within its catchment: Stevenage as well as Broxbourne, East Hertfordshire, Epping Forest, Harlow, North Hertfordshire and Welwyn Hatfield.

7.13 Development in these areas will also have (potential) effects on the treatment works and, by extension the surrounding European site. Any increase in population in these areas might also result in increased recreational pressures.

7.14 Stevenage is the first of these authorities to reach 'publication' stage with a new Local Plan since the NPPF was released in 2012. As such, the provisions of paragraph 7.2 could normally be considered to apply.

7.15 However, Natural England have again advised a precautionary approach and suggested that any adopted local plans in these areas should be taken into account in the consideration of in-combination effects.

7.16 The plan-making situation in the six authorities that, along with Stevenage, lie (partially or wholly) within the Rye Meads catchment is summarised in Table 5 below. It can be seen that, compared to the London Boroughs above, adopted local plans within the Rye Meads catchment are significantly more aged. It is notable in a number of instances that:

- The plan period has expired; and / or
- The plan relates to housing targets in Structure Plans subsequently superceded by East of England Plan which was, in turn, revoked in 2013; while
- The remaining publicly available documentation relating to the examination of those plans does not obviously make reference to the presence (or otherwise) of a Habitats Regulations Assessment in the evidence base.

7.17 As such, a number of these documents no longer contain relevant targets relating to housing growth such that they might be considered as a likely 'in combination' effect.

Table 5: Plan-making in local planning authorities within Rye Meads WwTW catchment

Authority	Current plan	HRA completed?	Revised plan published since NPPF?
Broxbourne	Local Plan (2005)	Unknown	No
Epping Forest	Local Plan (1998 with 2006 alterations)	Unknown	No
East Hertfordshire	Local Plan (2007)	Yes No significant effects	No
Harlow	Local Plan (2006)	Unknown	No
North Hertfordshire	Local Plan (1996)	No	No
Welwyn Hatfield	Local Plan (2005)	Unknown	No

7.18 In any instance, it is considered that the evidence that has been gathered for the purposes of this report and the wider Local Plan evidence base already enable any such effects to be considered. The WCS review contains data relating to the baseline (i.e. existing) population in these authorities alongside emerging plan proposals. This allows total existing, and potential future, populations to be considered. Potential in-combination effects arising from the existing and / or future Local Plans of authorities within the Rye Meads catchment are consequentially considered in this opinion.

7.19 Hertfordshire is a two-tier area for planning purposes. Although individual District and Borough Councils are responsible for producing local plans, the County Council retains responsibility for minerals and waste planning matters.

7.20 The Hertfordshire Waste Core Strategy and Development Management Policies document was adopted in November 2012. The accompanying HRA identified there were not likely to be significant effects, though some elements of the analysis were 'deferred' to the consideration of detailed site allocations.

7.21 In 2014, the County Council adopted the accompanying Waste Site Allocations document. The accompanying evidence demonstrated that Appropriate Assessment would not be necessary, principally because any sites with potential adverse impacts were screened out early in the site selection process.

7.22 There are not considered to be any likely in-combination effects arising from these documents.

7.23 Hertfordshire County Council are currently early in the process of reviewing the adopted Minerals Local Plan (2007). This Plan has not yet been published so it is not possible to consider in-combination effects.

7.24 Rye Meads sits on the Hertfordshire / Essex border. Two of the local authorities identified above are in Essex, which is also a two-tier authority. The waste and minerals plans for Essex are also considered.

7.25 A Habitats Regulation Assessment on the Essex Waste Local Plan: Revised Preferred Approach was completed in June 2015. All of the preferred sites were 'screened out' as part of this assessment process. It identified that "It should be possible to mitigate water pollution through strict controls of the waste facilities".

7.26 The Essex Minerals Local Plan was adopted in July 2014. The Inspector's report notes that:

> *The Habitats Regulations Assessment November 2012 [SD-08&08A] sets out why the Preferred and Reserve Sites and policies can be screened out as unlikely to lead to significant effects that would require AA of the Plan. However, it is noted that AA of certain detailed site-specific proposals might be required at planning application stage and this is duly noted in the individual site requirements.*

7.27 Given the conclusions of the relevant reports, and the fact that the applications / projects identified in the Inspector's report above have not yet been applied for (and will be subject to their own assessment in any case), it is concluded that Essex's waste and minerals plans are not required to be included in the consideration of in combination effects.

7.28 Natural England concurs with these findings insofar as they relate to county level minerals and waste plans.

Other relevant plans, programmes and projects

7.29 All water companies produce Water Resource Management Plans (WRMPs) every five years. These show how water will be supplied to meet demand over the next 25 years.

7.30 Affinity Water is responsible for water supply across the majority of the Rye Meads catchment area.

7.31 Affinity's latest WRMP was approved in May 2014. It recognises that its central region was forecast to have a supply deficit in both 2020 and 2040. Various options are explored to remedy this. The deficits that were initially forecast were strongly influenced by a recommendation by the Environment Agency to close a pumping station to the south-east of Stevenage.

7.32 The European Water Framework Directive (WFD) came into force with the aim of ensuring all water bodies reached 'good' status by 2015. A River Basin Management Plan (RBMP) for the Thames area was published in 2009. An updated plan will be produced by the end of 2015.

7.33 These plans, and the associated projects / strategies that flow from them, would normally be screened out from in-combination effects as they are intended to have a positive impact upon factors which might affect the Lee Valley SPA.

7.34 Notwithstanding, all of the plans relating to the water environment of relevance to Stevenage's Local Plan and / or the future operation of Rye Meads STW are identified, and explained in further detail, in the WCS. This should be referred to for more information.

8 Screening analysis and mitigation

Background

8.1 Having established the European Sites which might be affected by a Plan, the elements of the Plan which might affect those sites and other plans which should be taken into consideration, it is necessary to determine whether Stevenage's Local Plan is likely to have a significant effect either by itself or in combination.

8.2 In establishing this opinion, there is an inevitable degree of circulatory thinking and / or iteration. The plans and programmes identified above are already interlinked, at least to some extent, or have taken steps to individually or jointly consider the impacts of their proposals:

- All the statutory land-use plans identified are now subject to the provisions of the Habitats Directive. Those plans prepared since the implementation of the regulations, have been subject to screening to determine if Appropriate Assessment is required. Those which are to be prepared will be subject to the same provisions;
- These plans are, in turn, informed by, the outputs of Water Cycle Studies or other relevant evidence studies. This includes the recent Water Cycle Strategy Review completed by Stevenage Borough Council. These have been produced with local authorities and other relevant statutory bodies, such as the Environment Agency meaning the requirements of the WFD have already been considered and incorporated; while
- WRMPs (and other strategies and plans associated with the water environment) are informed by projections of future growth which, in turn, are calibrated against local authority development proposals.

8.3 As such, there is already a strong interplay between the requirements of the Habitats Directive and WFD, the proposals in WRMPs and statutory land-use plans and their associated evidence base.

8.4 It is equally important to have regard to previous work undertaken to satisfy the requirements of the Habitats Directive. DEFRA guidance is clear that

> *"Where previous decisions have been taken in relation to the appropriate assessment requirements for a plan or project, competent authorities should adopt the parts of the earlier assessment that are robust"*[18]

8.5 Stevenage previously developed a draft Core Strategy. This was based upon the proposals in the then East of England Plan. It was subject to a screening under the Habitat Regulations which determined that the Stevenage Local Development Framework was not likely to harm a European Site. This was due to the inclusion of phasing policies that reflected the recommendations of the 2009 Water Cycle Study and development of specific land allocations. Although it was ultimately not proceeded with, the draft Core Strategy identified significantly higher levels of development in and around the Borough than being proposed in the current round of plans. The assessment was endorsed by Natural England in 2010.

8.6 To aid with the screening process, the Council has recently completed a review of the Rye Meads Water Cycle Strategy. This helps to address a number of the potential 'in-combination' issues

[18] Guidance on competent authority coordination under the Habitats Regulations (DEFRA, 2012)

identified above in relation to infrastructure capacity and (potential) impact upon water quality. The WCS should be referred to for more information. However, for the purposes of this screening opinion, some of the key points are summarised as follows:

- Achieving the 'good' status required across all water bodies in the Thames River Basin District by 2027 is not possible using only current technologies. An aspiration has been set to achieve good status in at least 60% of bodies by 2021 and as many as possible by 2027 (paragraph 2.12);
- The Upper Lee is an area of 'water stress' with groundwater abstraction a particular issue for the River Beane near Stevenage (2.20)
- The Lee Navigation (from Hertford to the confluence with the River Stort at Rye Meads) has achieved moderate status against the WFD (2.22);
- The ecological status of the River Lee, both immediately up- and down-stream from Rye Meads is rated as moderate (2.63 / Fig. 7)
- The chemical status is good between Hertford and Rye Meads. However, the chemical status reverts to 'failed' immediately south of Rye Meads where the Lee converges with the River Stort. The Environment Agency have identified that the Rye Meads STW contributes to a chemical (phosphate) failure (2.65-2.66)
- The Environment Agency's regulatory role as granter of discharge licences to Thames Water should ensure no further adverse impacts upon water quality arises as a result of future development (2.88);
- Abstraction from the Whitehall Pumping Station, near Stevenage, is to be reduced by 90% from April 2018 (2.121-2.122);
- Between 2007 and 2014 around 40% fewer homes were built than were envisaged in the 2009 WCS (3.37);
- Stevenage is now only expected to deliver around 3 in every 10 of the homes previously anticipated by the 2009 WCS between 2007 and 2018 (3.39);
- Proposed development levels across the Rye Meads catchment as a whole are notably below those previously required by the East of England Plan and assumed in the 2009 Water Cycle Study (3.105);
- Trade effluent demand is held constant at 2006/07 levels (4.20);
- Current (2015) demand for wastewater treatment is likely to represent the peak over the current plan period to 2031 due to falling water consumption and household sizes (4.45);
- Although the modelling results suggest that growth may not have a major impact upon flow, or by association, flow consents, the increase in population will still generate an increase in organic load to the WwTW (5.12);
- There is minimal spare capacity within existing processes. An upgrade in treatment capacity is being development to accommodate currently proposed growth through to at least 2026 (5.13-5.14);
- Should additional tank volumes be required beyond 2026, Thames Water consider there to be ample space to provide these within the site. These works would be unlikely to impact upon the SPA and would be subject to the relevant regulatory regimes and, if necessary, mitigation measures before they could be approved in any case (5.15);
- Providing that Rye Meads could continue to operate within the standards prescribed in its consents, there should be no further deterioration in water quality (5.21) albeit that measures may be required to achieve the requirements of the WFD (5.24);
- A large-scale upgrade of Rye Meads STW will now not be required in the period to 2031 (6.7);

- Thames Water have confirmed that they consider the modelling in the Water Cycle Strategy Review to be an appropriate basis for updating the 2009 study. Their own figures bear out the suggestion arising from this modelling that flows to the Rye Meads STW may have peaked (7.4); and
- The impact on Rye Meads SSSI (and, by extension, relevant areas of the Lee Valley SPA) should be avoided through negotiations with Natural England and the inclusion of any appropriate mitigation measures (7.12)

8.7 A number of key messages can therefore be drawn from the WCS in relation to this report:

- Measures of water quality around Rye Meads STW are the same in 2014 as they were in 2009, albeit that they are not presently meeting the requirements of the WFD;
- Proposed development levels across the emerging statutory local plans of authorities within Rye Meads' catchment are substantially reduced from the levels previously assessed in the 2009 Water Cycle Strategy and which informed the previous Appropriate Assessment screening opinion of Stevenage's draft plan in 2010;
- There is now likely to be capacity for Rye Meads to accommodate future levels of development without necessitating large-scale upgrades, albeit that increased processing capacity may be required;
- Any works are considered unlikely to impact upon the SPA and would be subject to their own investigations before being implemented;
- There should be no further deterioration in water quality, while the requirements of the WFD may in fact lead to improvements in the quality of discharged water over time.

8.8 On this last point, it is particularly important to emphasise that, notwithstanding the overarching aims for water quality contained in the WFD, the species for which the Lee Valley SPA has been identified were supported under the environmental regime (up to and at) the point of designation in 2000. Those species continue to be supported under current conditions[19].

8.9 Therefore, failure to achieve 'good' status against the WFD (either now or in the future) should not be conflated with an adverse or significant effect upon the European Site for the purposes of these assessments. Indeed, the WCS recognises that the imposition of more stringent water quality standards are likely to be the key limiting factor to the operation of the works in the future.

Screening of Stevenage's draft local plan (2015)

8.10 Section 5 of this report identifies that the potential for impact on water quality and levels within the Lee Valley SPA, associated with the operation of Rye Meads STW, is the key factor which needs to be assessed in coming to an opinion on whether Stevenage's Local Plan is likely to have a significant effect on a European Site.

8.11 In the absence of specific visitor data, and applying the principle of a precautionary approach, potential recreational impacts are also considered on the advice of Natural England.

8.12 Section 6 of this report concludes that, on both grounds, the overall quantum of residential development proposed by the draft Plan is the element of the plan most likely to be captured by the requirements of the Habitats Directive. It 'screens in' two policies which might need to be considered

[19] Albeit with the caveat of declining Shoveler numbers since designation (see paragraph 5.13).

in more detail. It identifies a third policy that, although 'screened out', may have (positive) implications in relation to this assessment.

8.13 Policy SP5 of the draft Plan places an overarching expectation that new development will contribute fairly towards the infrastructure demands it creates. Utilities and biodiversity are specifically identified as two areas where contributions might be sought.

8.14 Policy SP7 of the draft Local Plan proposes a target of at least 7,600 homes within Stevenage Borough over the period 2011-2031.

8.15 Policy IT3 requires significant development proposals to demonstrate how infrastructure needs will be met. It specifically states that "where appropriate, conditions, legal agreements or other mechanisms will be used to ensure that development is phased to coincide with the delivery of infrastructure".

Potential impacts on a European site: water quality

8.16 The Water Cycle Strategy Review provides a robust evidence base for the plan. It has considered the additional demands likely to be placed upon the Rye Meads STW as a consequence of Stevenage's Local Plan. The key findings are summarised above and are reflected in the draft policies of the Plan.

8.17 The Review has, in consultation with Thames Water and the Environment Agency, demonstrated that there are no 'show stoppers' with a reasonable prospect that development from Stevenage can be accommodated.

8.18 The review has informed the relevant policies of the Plan. As currently written, it provides a framework for the development of additional homes, the provision of infrastructure and the imposition of conditions or other relevant mechanisms to hold back development where sufficient capacity does not presently exist.

8.19 It is considered this policy framework provides an appropriate basis for ensuring that the Plan can proceed without likely significant effects on a European site. However, it is considered that additional clarification / wording to the supporting text could strengthen this position. This is discussed below.

Potential impacts on a European site: recreation

8.20 It is considered doubtful that Stevenage's Plan is likely to have a significant effect in its own right upon recreational pressures within the SPA due to the distance of the Borough from the European Site.

8.21 The analysis of the European Site in Section 5 identifies the presence of a Site Improvement Plan for the Lee Valley SPA. This is the most appropriate vehicle for future analysis and management of recreational impacts on the site. Policy SP5 of the draft plan provides an overarching means of securing contributions from new development for mitigation.

8.22 It is considered that, by strengthening the links between this policy and any future relevant management strategies, any adverse impacts arising from Stevenage's Plan can be mitigated against.

8.23 There are no large planning applications that have been submitted to Stevenage Borough Council that could, or would likely, impact on the SPA in terms of recreational disturbance.

Potential impacts on a European site: other considerations

8.24 It would be reasonable to consider that the pollution outputs from the size of development expected in Stevenage could result in potential impacts through air quality concerns and lighting and noise pollution.

8.25 However, it is considered that given the geography of Stevenage in relation to the SPA, light and noise pollution will have a de minimis effect. As set out previously, the distance between Stevenage and the SPA is upwards of 10 miles.

8.26 In addition, any additional traffic resulting from the new development in Stevenage will be conveyed in a north or south direction from Stevenage. This would not direct traffic towards the SPA and, consequently, development in Stevenage would not directly affect the SPA.

Recommended amendments to the draft local plan

8.27 It is considered that the policies of the draft Plan and the associated evidence base provide a good basis for ensuring that Stevenage's Local Plan will not, in itself, result in harm to the European site. Whilst not going to issues of fundamental soundness, it is considered that the Plan could be usefully improved, if the Inspector is so minded, by the addition of further wording to the supporting text of draft Policies SP5 and IT3 would reflect the key issues raised in this screening report and in the comments of Natural England.

It is recommended that Policy SP5 be amended to include:

"…e. Co-operate with other utilities and service providers to ensure that appropriate capacity is available to serve new development; and
f. Ensure new development does not have an adverse effect on the Lee Valley SPA. New development post 2026 will only be permitted if the required capacity is available at Rye Meads STW, including any associated sewer connections."

It is recommended that the supporting text of draft Policy SP5 be amended to include:

"…The Council will continue to engage with Thames Water, local authorities within the Rye Meads catchment, the Environment Agency and Natural England to ensure the need for additional capacity is reflected in appropriate plans and strategies and delivered without causing harm to the European Site.

Rye Meads is located some distance from Stevenage. However, in combination with the plans of other authorities, it is recognised that the rise in population resulting from the construction of new homes could increase recreational pressures on the European Site. A precautionary approach is necessary. We will encourage dialogue between developers, Natural England, the RSPB and local authorities within a reasonable distance of the SPA to ensure appropriate site management strategies and measures are implemented. Where appropriate, we will consider using contributions towards biodiversity that have been secured under Policy SP5 to assist in their delivery…"

It is recommended that the supporting text of draft Policy IT3 be amended to include:

> *"Our environmental appraisals recognise that it will be necessary to take a precautionary approach to avoid causing harm to the Lee Valley SPA, which surrounds the Rye Meads STW. Proposals will only be approved where it can be demonstrated that the existing or planned wastewater infrastructure can accommodate the proposals."*

8.28 These measures will ensure that Stevenage's own Plan contains measures to mitigate against any potential adverse impacts arising.

In-combination effects: water quality

8.29 As per the findings of the Water Cycle Strategy Review, it is considered likely than planned capacity at Rye Meads STW will be sufficient to cover the period to at least 2026 with a reasonable prospect of accommodating development to 2031.

8.30 Plainly, if alternate solutions are provided within the catchment in this time and / or development comes forward at a slower rate than anticipated by the WCS review, this time horizon would extend.

8.31 In coming to this conclusion, data on actual growth over the period to 2014 and assumptions around future growth over the period to 2031 has been collated for the catchment authorities and subject to consultation.

8.32 The age of many existing plans within the Rye Meads catchment, along with changes to the strategic planning system since their adoption, means that the combined effects of existing plans are effectively captured within the baseline (to 2014) data.

8.33 Stevenage is the first of the authorities within the catchment to publish a 'new-style' / post-NPPF Local Plan. Section 7 of this report establishes, with reference to previous guidance on the implementation of the Habitats Directive, that the in-combination test cannot reasonably be expected to include the possible effects of plans that have not yet been prepared.

8.34 Strict application of this approach would suggest that Stevenage should not be required to test the in-combination implications of emerging, but not yet formally published, proposals.

8.35 Notwithstanding this point, the Water Cycle Strategy Review incorporates consideration of emerging housing targets within the catchment as they stood at the time of writing. Furthermore, in addition to the specific measures proposed for Stevenage's Local Plan, it is considered that any future requirement to provide additional wastewater capacity would be protected by the following 'quadruple lock':

- The emerging plans of all remaining local planning authorities within Rye Mead's catchment remain subject to the requirements of the Habitats Directive. This will allow further opportunities for the capacity of Rye Meads STW to be further tested through the individual assessments of each authority's plan as (prospective) housing targets are refined. This will allow for any further, or alternate, mitigation measures to be identified and implemented;
- East Hertfordshire, as the Local Planning Authority in which Rye Meads lies will have to consider the implications of any further specific land-use proposals at the treatment works –

whether these arise through the Local Plan process or any subsequent planning application(s). Policy ENV12 of East Hertfordshire's adopted Local Plan is a precautionary policy stating that applications likely to have an adverse impact upon a European Site will not be granted planning permission unless the exception tests contained in the Habitats Directive are met. Although yet to reach Publication stage, the latest iteration of East Hertfordshire's emerging local draft suggests similar preventative policies will be incorporated in any new plan[20];

- Thames Water (or any successor body), as the operators of the Rye Meads STW will have to consider the implications of any proposed or additional upgrades, including the consideration of alternatives where they could give rise to adverse impacts[21]; while
- The Environment Agency, as regulator of the water environment, are responsible for the issuing (or declination of requests for) discharge licences. The EA are bound by the requirements of the WFD to achieve 'good' status for all qualifying water bodies and are therefore considered exceedingly unlikely to grant consent for any proposals which would have an adverse impact.

8.36 It is considered that these measures are sufficient to ensure no adverse in-combination effects will arise as a result of the land-use plans of other authorities within the Rye Meads catchment, in relation to the operation of the wastewater treatment works.

In-combination effects: recreational pressures

8.37 It is recognised that future growth levels across the wider Rye Meads catchment could lead to increased recreational pressures upon the European Site, especially for those authorities within, or immediately adjoin (parts of) it.

8.38 As per paragraphs 8.32 to 8.36 above, any in-combination effects that may have arisen from existing plans have effectively already been implemented. It is not considered strictly necessary for Stevenage to assess the in-combination effects of yet-to-be-published plans.

8.39 However, as with the conclusions drawn above for Stevenage's own Plan, it is considered that the recently published Site Improvement Plan (SIP) provides the most appropriate vehicle for mitigating against this issue. It will be for other relevant authorities to determine how best to reflect this issue in their own plans.

8.40 It is considered that the development of a site management programme, as identified in the SIP, along with the future assessment of other emerging plans within a reasonable recreational catchment of the European Site provide appropriate future safeguards.

[20] East Herts Draft District Plan Preferred Options Consultation (January 2014). Preferred Options Policy NE1 broadly replicates adopted Policy ENV12. Preferred Options Policy WAT5 relates to the provision of additional wastewater infrastructure.

[21] This approach has been demonstrably followed in the recent planning application by Thames Water to upgrade the Deephams WwTW in the London Borough of Enfield.

In-combination effects: other considerations

8.41 It is recognised that future growth levels across the districts of the Rye Meads catchment could lead to increased pollution from sources such as noise and light, and resultant decreases in air quality, particularly those authorities within, or immediately adjacent to it.

8.42 It is not considered that Stevenage should assess the in-combination effects of yet-to-be-published plans. In addition, it is considered unlikely that development in Stevenage will impact on air and noise pollution, or air quality to any measured extent.

9 Conclusions

9.1 There are no SPAs or SACs either within or close to Stevenage's Borough boundaries. However, much of Stevenage's waste is currently treated at Rye Meads sewerage treatment works. This works is located immediately in and adjacent to the Rye Meads SSSI, one of four geographically separate SSSIs which collectively form the Lee Valley SPA.

9.2 The SPA has been identified for supporting notable populations of three species: Shoveler, Gadwall and Bittern. SSSI monitoring data shows all three species to be present at Rye Meads. The Ramsar designation further identifies the presence of scarce plant and invertebrate species.

9.3 Given the physical distance of Stevenage Borough from Rye Meads and the SPA, direct impacts arising from development or the recreational demands of its population were initially screened out.

9.4 Due to the management priorities identified in analysis of the European Site, potential impacts on water quality arising from the operation of the Rye Meads STW were considered as the most likely limiting factor on Stevenage's Local Plan in relation to the requirements of the Habitats Directive.

9.5 Following advice from Natural England, consideration of potential recreational impacts upon the Lee Valley SPA were screened back in to this assessment on a discretionary basis, particularly to ensure in-combination effects were fully considered.

9.6 A review of the Plan, and the geography of water supply and disposal arrangements, led to the conclusion that the overall quantum of residential development being considered by the plan was key. Decisions about the precise distribution and location of sites were deemed immaterial as the entire Borough drains to Rye Meads. The small size of the Borough and the distance from the European Site was such that the distribution and location of sites were considered unlikely to have a material impact upon (the likelihood of) recreational visits to the SPA from the Borough.

9.7 Policies relating to commercial development have been screened out due to the assumption in the Water Cycle Strategy Review (agreed by Thames Water and the Environment Agency) that trade wastewater flows should be held constant. Thames Water retains the discretion as to whether to accept new commercial flows.

9.8 A wide range of other plans were considered for potential in-combination effects. The Local Plans of other authorities in the Rye Meads catchment are only at an early stage of development and, in other circumstances, may have legitimately been ruled out of further consideration.

9.9 However, the development of the evidence base for Stevenage's Local Plan and, in particular, the production of the Rye Meads Water Cycle Strategy Review means these potential effects have been scrutinised and are included to ensure a comprehensive approach is demonstrated.

9.10 The WCS has demonstrated that, across the catchment, proposed development levels are now substantially lower than were anticipated in a previous iteration of that study. That previous iteration had, in turn, previously informed an earlier draft Plan for Stevenage and an associated screening opinion under the Habitats Directive which determined there would be no significant effect; a conclusion which gained the endorsement of Natural England in 2010.

9.11 Based upon currently proposed development levels, Rye Meads STW is now considered capable of accommodating all development within its catchment until at least 2026 with a reasonable prospect of accommodating all development within its catchment until the end of Stevenage's proposed plan period in 2031.

9.12 This assessment importantly identifies that the species for which the SPA and Ramsar designations have been made are, and have been, supported by current and historic conditions in the water environment. Notwithstanding the laudable aims of the Water Framework Directive, failure to achieve its objectives should not result in a finding of 'a likely significant effect' for the purposes of this opinion.

9.13 Indeed, the WCS concludes that the imposition of more testing standards is likely to be the key limiting factor to the operation of the treatment works in the future. It states that, providing Rye Meads continues to operate within currently prescribed consents, it should not lead to deterioration in water quality. It further recognises that any future proposals for substantive development at the treatment works will be subject to its own regulatory requirements.

9.14 The inclusion of policies in Stevenage's draft Local Plan to ensure development makes reasonable contributions to biodiversity and infrastructure, and to prevent development occurring in advance of installed infrastructure capacity, provides an additional level of mitigation.

9.15 Through this screening process, it is recommended that additional wording be added to the supporting text of relevant policies to ensure the concerns of Natural England have been addressed and to mitigate against any future harm.

9.16 In terms of combined impacts, it is judged that the requirements of the Habitats Directive and other relevant legislation ensure that other plans and programmes will closely scrutinise their likely effects as they emerge. This is described in this report as a 'quadruple lock' of safeguards that will ensure the continued protection of the European Site.

9.17 By considering these factors, it is concluded that **the Local Plan for Stevenage is not likely to have a significant effect on the Lee Valley SPA** either by itself, or in combination with other relevant plans or programmes.

Appendices

Appendix 1 – Natural England Conservation Objectives for Lee Valley SPA

European Site Conservation Objectives for Lee Valley Special Protection Area Site Code: UK9012111

With regard to the individual species and/or assemblage of species for which the site has been classified ('the Qualifying Features' listed below);

Avoid the deterioration of the habitats of the qualifying features, and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive.

Subject to natural change, to maintain or restore:

- 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 populations of the qualifying features;
- The distribution of the qualifying features within the site.

Qualifying Features:

A021 *Botaurus stellaris*; Great bittern (Non-breeding)

A051 *Anas strepera*; Gadwall (Non-breeding)

A056 *Anas clypeata*; Northern shoveler (Non-breeding)

Explanatory Notes: European Site Conservation Objectives

European Site Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2010 (the "Habitats Regulations") and Article 6(3) of the Habitats Directive 1992. They are for use when either the appropriate nature conservation body or competent authority is required to make an Appropriate Assessment under the relevant parts of the respective legislation.

These conservation objectives are set for each bird feature for a Special Protection Area (SPA). Where the objectives are met, the site can be said to demonstrate a high degree of integrity and the site itself makes a full contribution to achieving the aims of the Birds Directive for those features. On the first page of this document there may be a list of 'Additional Qualifying Features identified by the 2001 UK SPA Review'. These are additional features identified by the UK SPA Review published in 2001 and, although not yet legally classified, are as a matter of Government policy treated in the same way as classified features.

This document is also intended for those who are preparing information to be used for an appropriate assessment by either the appropriate nature conservation body or a competent authority. As such this document cannot be definitive in how the impacts of a project can be determined. Links to selected sources of information, data and guidance which may be helpful can be found on Natural England's website. This list is far from exhaustive.

Appendix 2 – JNCC citation for Lee Valley SPA

NATURA 2000

STANDARD DATA FORM

FOR SPECIAL PROTECTION AREAS (SPA)
FOR SITES ELIGIBLE FOR IDENTIFICATION AS SITES OF COMMUNITY IMPORTANCE (SCI)
AND
FOR SPECIAL AREAS OF CONSERVATION (SAC)

1. Site identification:

1.1 Type A

1.2 Site code UK9012111

1.3 Compilation date 200009

1.4 Update

1.5 Relationship with other Natura 2000 sites

1.6 Respondent(s) International Designations, JNCC, Peterborough

1.7 Site name **Lee Valley**

1.8 Site indication and designation classification dates

date site proposed as eligible as SCI	
date confirmed as SCI	
date site classified as SPA	200009
date site designated as SAC	

2. Site location:

2.1 Site centre location

longitude	**latitude**
00 02 58 W	51 34 51 N

2.2 Site area (ha) 447.87

2.3 Site length (km)

2.5 Administrative region

NUTS code	Region name	% cover
UK54	Essex	5.00%
UK55	Greater London	44.00%
UK512	Hertfordshire	51.00%

2.6 Biogeographic region

Alpine	Atlantic	Boreal	Continental	Macaronesia	Mediterranean
	X				

3. Ecological information:

3.1 Annex I habitats

Habitat types present on the site and the site assessment for them:

Annex I habitat	% cover	Representativity	Relative surface	Conservation status	Global assessment

3.2 Annex I birds and regularly occurring migratory birds not listed on Annex I

		Population				Site assessment			
		Resident	Migratory						
Code	Species name		Breed	Winter	Stage	Population	Conservation	Isolation	Global
A056	*Anas clypeata*			406 I		C		C	
A051	*Anas strepera*			456 I		C		C	
A021	*Botaurus stellaris*			6 I		B		C	

4. Site description:

4.1 General site character

Habitat classes	% cover
Marine areas. Sea inlets	
Tidal rivers. Estuaries. Mud flats. Sand flats. Lagoons (including saltwork basins)	
Salt marshes. Salt pastures. Salt steppes	
Coastal sand dunes. Sand beaches. Machair	
Shingle. Sea cliffs. Islets	
Inland water bodies (standing water, running water)	67.0
Bogs. Marshes. Water fringed vegetation. Fens	4.0
Heath. Scrub. Maquis and garrigue. Phygrana	
Dry grassland. Steppes	
Humid grassland. Mesophile grassland	8.0
Alpine and sub-alpine grassland	
Improved grassland	10.0
Other arable land	
Broad-leaved deciduous woodland	10.0
Coniferous woodland	
Evergreen woodland	
Mixed woodland	
Non-forest areas cultivated with woody plants (including orchards, groves, vineyards, dehesas)	
Inland rocks. Screes. Sands. Permanent snow and ice	
Other land (including towns, villages, roads, waste places, mines, industrial sites)	1.0
Total habitat cover	**100%**

4.1 Other site characteristics

Soil & geology:

Alluvium, Clay, Mud, Neutral, Nutrient-poor

Geomorphology & landscape:

Floodplain, Lowland, Valley

4.2 Quality and importance

ARTICLE 4.1 QUALIFICATION (79/409/EEC)

Over winter the area regularly supports:

Botaurus stellaris (Europe - breeding)	6% of the GB population Five year peak mean for 1992/93 to 1996/97

ARTICLE 4.2 QUALIFICATION (79/409/EEC)

Over winter the area regularly supports:

Anas clypeata (North-western/Central Europe)	1% of the population 5 year peak mean, 1993/4-1997/8
Anas strepera (North-western Europe)	1.5% of the population 5 year peak mean, 1993/4-1997/8

4.3 Vulnerability

The whole area is affected by rather eutrophic water quality; but this is to be addressed via AMP3 funding under the Urban Waste Water Treatment Directive. The other main threat is that of human recreational pressure, but this is already well regulated through zoning of water bodies within the Lee Valley Regional Park. The majority of the site is already managed in accordance with agreed management plans in which nature conservation is a high or sole priority.
There is also a potential problem from over-extraction of surface water for public supply, particularly during periods of drought. This will be addressed through the Environment Agency review of consents. 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).

5. Site protection status and relation with CORINE biotopes:

5.1 Designation types at national and regional level

Code	% cover
UK04 (SSSI/ASSI)	100.0

Appendix 3 – Natural England management plan for Lee Valley SPA

Improvement Programme for England's Natura 2000 Sites (IPENS)

Planning for the Future

Site Improvement Plan

Lee Valley

Site Improvement Plans (SIPs) have been developed for each Natura 2000 site in England as part of the Improvement Programme for England's Natura 2000 sites (IPENS). Natura 2000 sites is the combined term for sites designated as Special Areas of Conservation (SAC) and Special Protected Areas (SPA). This work has been financially supported by LIFE, a financial instrument of the European Community.

The plan provides a high level overview of the issues (both current and predicted) affecting the condition of the Natura 2000 features on the site(s) and outlines the priority measures required to improve the condition of the features. It does not cover issues where remedial actions are already in place or ongoing management activities which are required for maintenance.

The SIP consists of three parts: a Summary table, which sets out the priority Issues and Measures; a detailed Actions table, which sets out who needs to do what, when and how much it is estimated to cost; and a set of tables containing contextual information and links.

Once this current programme ends, it is anticipated that Natural England and others, working with landowners and managers, will all play a role in delivering the priority measures to improve the condition of the features on these sites.

The SIPs are based on Natural England's current evidence and knowledge. The SIPs are not legal documents, they are live documents that will be updated to reflect changes in our evidence/knowledge and as actions get underway. The information in the SIPs will be used to update England's contribution to the UK's Prioritised Action Framework (PAF).

The SIPs are not formal consultation documents, but if you have any comments about the SIP or would like more information please email us at IPENSLIFEProject@naturalengland.org.uk, or contact Natural England's Responsible Officer for the site via our enquiry service 0300 060 3900, or enquiries@naturalengland.org.uk

This Site Improvement Plan covers the following Natura 2000 site(s)

UK9012111 Lee Valley SPA

Site description

The Lee Valley SPA comprises a series of embanked water supply reservoirs, sewage treatment lagoons and former gravel pits that display a range of man-made and semi-natural wetland and valley bottom habitats. The site is important for overwintering bittern as well as an internationally important population of two duck species.

Plan Summary

This table shows the prioritised issues for the site(s), the features they affect, the proposed measures to address the issues and the delivery bodies whose involvement is required to deliver the measures. The list of delivery bodies will include those who have agreed to the actions as well as those where discussions over their role in delivering the actions is on-going.

Priority & Issue	Pressure or Threat	Feature(s) affected	Measure	Delivery Bodies
1 Water Pollution	Threat	A021(NB) Bittern, A051(NB) Gadwall, A056(NB) Shoveler	Investigate and agree appropriate water quality	Environment Agency, Natural England, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)
2 Hydrological changes	Threat	A021(NB) Bittern, A051(NB) Gadwall, A056(NB) Shoveler	Investigate and agree appropriate water levels	Natural England, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)
3 Public Access/Disturbance	Threat	A021(NB) Bittern, A051(NB) Gadwall, A056(NB) Shoveler	Investigate recreational pressure priority areas and agree management measures	Environment Agency, Hertfordshire and Middlesex Wildlife Trust, Natural England, RSPB, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)
4 Inappropriate scrub control	Threat	A021(NB) Bittern, A051(NB) Gadwall, A056(NB) Shoveler	Manage scrub to required levels to maintain/restore habitat	Environment Agency, Hertfordshire and Middlesex Wildlife Trust, Natural England, RSPB, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)

5 Fisheries: Fish stocking	Threat	A021(NB) Bittern, A051(NB) Gadwall, A056(NB) Shoveler	Investigate and agree appropriate fish stocking	Environment Agency, Natural England, RSPB, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)
6 Invasive species	Threat	A021(NB) Bittern, A051(NB) Gadwall, A056(NB) Shoveler	Investigate and agree appropriate management response	Environment Agency, Hertfordshire and Middlesex Wildlife Trust, Natural England, RSPB, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)
7 Inappropriate cutting/mowing	Threat	A021(NB) Bittern	Manage reed beds for bitterns	Environment Agency, Hertfordshire and Middlesex Wildlife Trust, Natural England, RSPB, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)
8 Air Pollution: risk of atmospheric nitrogen deposition	Threat	A021(NB) Bittern	Investigate the potential impacts of air pollution	Natural England

Issues and Actions

This table outlines the prioritised issues that are currently impacting or threatening the condition of the features, and the outstanding actions required to address them. It also shows, where possible, the estimated cost of the action and the delivery bodies whose involvement will be required to implement the action. Lead delivery bodies will be responsible for coordinating the implementation of the action, but not necessarily funding it. Delivery partners will need to support the lead delivery body in implementing the action. In the process of developing the SIPs Natural England has approached the delivery bodies to seek agreement on the actions and their roles in delivering them, although in some cases these discussions have not yet been concluded. Other interested parties, including landowners and managers, will be involved as the detailed actions are agreed and delivered. Funding options are indicated as potential (but not necessarily agreed or secured) sources to fund the actions.

1 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.

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1A	Define the appropriate water quality standards for significant water bodies to inform management of changes in water quality.	Not yet determined	2015-17	Investigation / Research / Monitoring	Not yet determined	Environment Agency	Natural England, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1B	Agree water quality management for significant water bodies with key stakeholders.	Not yet determined	2017-29	Partnership agreement	Heritage Lottery Fund (HLF)	Environment Agency	Natural England, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
1C	Develop and implement a Diffuse Water Pollution Plan	Not yet determined	2017-20	Diffuse Water Pollution Plan	Heritage Lottery Fund (HLF)	Environment Agency	Natural England, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)

2 Hydrological changes

Reservoir levels linked to operational requirements and all water bodies subject to natural fluctuations accounting for abstraction and climatic change.

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
2A	Define more clearly the water level requirements for the habitats supporting the SPA bird features.	Not yet determined	2015-17	Investigation / Research / Monitoring	Not yet determined	Natural England	Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
2B	As a follow up to action 2A, agree the necessary water level management with key stakeholders for significant water bodies.	Not yet determined	2017-20	Water Level Management Plan	Heritage Lottery Fund (HLF)	Natural England	Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)

3 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.

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
3A	Investigate whether there is a need for change to access management.	Not yet determined	2015-18	Investigation / Research / Monitoring	Not yet determined	Lee Valley Regional Park Authority (LVRPA)	Environment Agency, Hertfordshire and Middlesex Wildlife Trust, Natural England, RSPB, Thames Water Utilities Ltd

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
3B	Agree appropriate management measures with stakeholders to align with best practice.	Not yet determined	2018-20	Partnership agreement	Heritage Lottery Fund (HLF)	Lee Valley Regional Park Authority (LVRPA)	Environment Agency, Hertfordshire and Middlesex Wildlife Trust, Natural England, RSPB, Thames Water Utilities Ltd

4 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.

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
4A	Secure rescources to target management delivery.	Not yet determined	2015-20	Habitat creation / restoration strategy: Habitat restoration	Heritage Lottery Fund (HLF)	Lee Valley Regional Park Authority (LVRPA)	Environment Agency, Hertfordshire and Middlesex Wildlife Trust, Natural England, RSPB, Thames Water Utilities Ltd

5 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.

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
5A	Define the appropriate fish community targets for significant water bodies.	Not yet determined	2015-18	Investigation / Research / Monitoring	Not yet determined	Environment Agency	Natural England, RSPB, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
5B	Action a plan to agree necessary fisheries management for significant water bodies.	Not yet determined	2018-20	Partnership agreement	Heritage Lottery Fund (HLF)	Environment Agency	Natural England, Thames Water Utilities Ltd

6 Invasive species

Azolla and/or invasive aquatic blanket weeds will adversely affect aquatic habitat (food sources).

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
6A	Review and update management control of invasive aquatic plant species, and agree regular review process. This needs a more strategic approach that is more planned and less reactive to outbreaks.	Not yet determined	2015-17	Investigation / Research / Monitoring	Not yet determined	Environment Agency	Hertfordshire and Middlesex Wildlife Trust, Natural England, RSPB, Thames Water Utilities Ltd, Lee Valley Regional Park Authority (LVRPA)

7 Inappropriate cutting/mowing

The reedbed requires rotational management for bittern. This is dependent upon funding availability.

Action	Action description	Cost estimate	Timescale	Mechanism	Funding option	Delivery lead body	Delivery partner(s)
7A	Secure rescources to target management delivery.	Not yet determined	2015-20	Habitat creation / restoration strategy: Habitat restoration	Heritage Lottery Fund (HLF)	Lee Valley Regional Park Authority (LVRPA)	Environment Agency, Hertfordshire and Middlesex Wildlife Trust, Natural England, RSPB, Thames Water Utilities Ltd

8 Air Pollution: risk of atmospheric nitrogen deposition

Nitrogen deposition exceeds site relevant critical loads.

Action	*Action description*	*Cost estimate*	*Timescale*	*Mechanism*	*Funding option*	*Delivery lead body*	*Delivery partner(s)*
8A	Further investigate potential atmospheric nitrogen impacts on the site based on application of guidance from Chief Scientist Group Nitrogen Task and Finish Group.	Not yet determined	2017	Investigation / Research / Monitoring	Not yet determined	Natural England	n/a

Site details

The tables in this section contain site-relevant contextual information and links

Qualifying features

#UK Special responsibility

Lee Valley SPA	A021(NB) *Botaurus stellaris*: Great bittern
	A051(NB) *Anas strepera*: Gadwall
	A056(NB) *Anas clypeata*: Northern shoveler

Site location and links

Lee Valley SPA

Area (ha) **447.87** *Grid reference* **TQ351887** Map link

Local Authorities	Essex; Greater London; Hertfordshire
Site Conservation Objectives	European Site Conservation Objectives for Lee Valley SPA
European Marine Site conservation advice	n/a
Regulation 33/35 Package	n/a
Marine Management Organisation site plan	n/a

Water Framework Directive (WFD)

The Water Framework Directive (WFD) provides the main framework for managing the water environment throughout Europe. Under the WFD a management plan must be developed for each river basin district. The River Basin Management Plans (RMBP) include a summary of the measures needed for water dependent Natura 2000 sites to meet their conservation objectives. For the second round of RBMPs, SIPs are being used to capture the priorities and new measures required for water dependent habitats on Natura 2000 sites. SIP actions for non-water dependent sites/habitats do not form part of the RBMPs and associated consultation.

Lee Valley SPA

River basin	Thames RBMP
WFD Management catchment	London
WFD Waterbody ID (Cycle 2 draft)	GB106038033200, GB30641193, GB30641198, GB30641274, GB30641313, GB30641865, GB30641884, GB30641900, GB30641922, GB30641924, GB30641939, GB30641956

Overlapping or adjacent protected sites

Site(s) of Special Scientific Interest (SSSI)	
Lee Valley SPA	Amwell Quarry SSSI
	Turnford & Cheshunt Pits SSSI
	Rye Meads SSSI
	Walthamstow Reservoirs SSSI

National Nature Reserve (NNR)	
Lee Valley SPA	n/a

Ramsar	
Lee Valley SPA	Lee Valley

Special Areas of Conservation (SAC) and Special Protection Areas (SPA)	
Lee Valley SPA	n/a

Version	*Date*	*Comment*
1.0	18/12/2014	

Appendix 4 – JNCC citation for Lee Valley Ramsar

dd. 09.10.00

RAMSAR INFORMATION SHEET

FOR WETLANDS OF INTERNATIONAL IMPORTANCE

Site reference number 7UK147

1 Compilation date September 2000
2 Country UK (England)
3 Name of wetland Lee Valley
4 Site centre location: Latitude: 51 34 51 N Longitude: 00 02 58 E
5 Altitude 5-35m
6 Area (ha) 447.87

7 Overview

The Lee Valley 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 and shoveler and nationally important numbers of several other bird species.
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.

8 Wetland type Inland wetland, Man-made wetland

Code	Name	% Area
U	Peatlands (including peat bogs swamps, fens)	4
6	Reservoirs / barrages / dams	30
7	Gravel / brick / clay pits	30
8	Sewage farms	7
Other	Other	29

9 Ramsar Criteria 2, 6
10 Map of the site √
11 Compiler Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough
Cambridgeshire PE1 1JY
UK
Telephone/Fax : +44(0) 1733 562626 / +44(0) 1733 555948

12 Justification of criteria

Ramsar Criterion 2

The site supports the nationally scarce plant species whorled watermilfoil *Myriophyllum verticillatum* and the rare or vulnerable invertebrate *Micronecta minutissima* (a waterboatman).

Ramsar criterion 6

Over winter the site regularly supports internationally important populations of: Gadwall *Anas strepera*, Shoveler *Anas clypeata*

13 General location

The Lee Valley site comprises four SSSIs spaced along the valley from just downstream of Ware in Hertfordshire to Finsbury Park in London; a total distance of about 24 km. The whole site is contained within the Lee Valley Regional Park.
Administrative Region: Greater London, Essex, Hertfordshire

14 Physical Features

Soil & Geology	alluvium, clay, gravel, mud, neutral,

	nutrient-rich
Geomorphology and Landscape	floodplain, lowland, valley
Nutrient status	highly eutrophic
pH	circumneutral, strongly alkaline
Salinity	fresh
Soil	no information
Water permanence	usually permanent
Summary of main climatic features	Rainy, temperate climate with a mild winter and periodic frost. Mean minimum temperature approximately 7.8°C. Mean maximum temperature approximately 14.7°C. Mean annual precipitation approximately 548.7mm, with a winter maximum.

15 Hydrological values

Maintenance of water quality (removal of nutrients), Water supply , sewage treatment

16 Ecological features

Open water, plus associated wetland habitats including reedbeds, fen grassland and woodland supporting a number of wetland plant and animal species including internationally important numbers of wintering wildfowl.

17 Noteworthy flora

Nationally important species occurring on the site

Higher Plant

Myriophyllum verticillatum

18 Noteworthy fauna

Birds

Species occurring at levels of international importance (as identified at designation):

Over winter the area regularly supports:

Gadwall, *Anas strepera* (Northwestern Europe)	456 individuals, representing an average of 1.5% of the population (Five year peak mean for 1993/94 to 1997/98)
Shoveler, *Anas clypeata* (Northwestern/Central Europe)	406 individuals, representing an average of 1% of the population (Five year peak mean for 1993/94 to 1997/98)

Nationally important species occurring on the site

Birds

Botaurus stellaris, Phalacrocroax carbo, Podiceps cristatus, Aythya fuligula, Aythya ferina, Ardea cinerea

Invertebrate

Micronecta minutissima

19 Social and Cultural Values

Aesthetic
Conservation education
Current scientific research
Non-consumptive recreation
Sport fishing
Tourism

20 Land tenure/ownership

Ownership category	On-Site	Off-Site
Non-governmental organisation	+	+
Local authority, municipality etc.	+	+
Private	+	+
Water company	+	+

21 Current land use

Activity	On-Site	Off-Site	Scale
Nature conservation	+	+	Large-Scale
Tourism	+	+	Large-Scale
Research	+	+	Small-Scale
Fishing: recreational/sport	+	+	Large-Scale
Freshwater aquaculture		+	Small-Scale
Grazing (unspecified)		+	Small-Scale
Industry		+	Large-Scale
Sewage treatment/disposal	+	+	Large-Scale
Flood control		+	Small-Scale
Mineral exploration		+	Large-Scale
Transport route		+	Small-Scale
Domestic water supply	+	+	Large-Scale
Urban development		+	Large-Scale
Non-urbanised settlements		+	Small-Scale

22 Adverse factors affecting the ecological character of the site

Activity	On-Site	Off-Site	Scale
Vegetation succession	+	+	Large-Scale
Water diversion for irrigation/domestic/industrial use		+	Small-Scale
Eutrophication	+	+	Small-Scale
Persistent drought		+	Small-Scale
Introduction/invasion of exotic plant species	+	+	Small-Scale
Recreational/tourism disturbance (unspecified)	+	+	Large-Scale
General disturbance from human activities		+	Small-Scale
Unspecified development: urban use		+	Large-Scale

23 Conservation measures taken

Conservation measure	On-site	Off-site
SSSI	+	+
SPA	+	
Land owned by a NGO for nature conservation	+	+
Site management statement/plan implemented	+	+

24 Conservation measures proposed but not yet implemented

see below

Site vulnerability and management statement

The site may be affected by the eutrophic condition of the water. This should be addressed by improvements to sewage treatment works funded by AMP3 under the Urban Waste Water Treatment Directive.

There is also a potential problem from over-abstraction of surface water for public supply; particularly during periods of drought. This will be addressed through the Environment Agency review of consents.

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).

Virtually all of the site is subject to management plans in which nature conservation is a high or sole priority. Issues such as arresting (or locally reversing) vegetational succession are being addressed via these plans.

Exotic plants including Himalayan balsam *Polygonum polystachym* and Japanese knotweed *Reynoutria japonica* pose a threat to native plant communities and dependent animal species. Possible solutions are being examined for future action.

Recreational disturbance is minimised by a system of zoning of water bodies within the Lee Valley Regional Park.

25 Current scientific research/survey/monitoring and facilities

· Wetland Bird Survey counts
· Various University of Hertfordshire projects
· Ongoing SSSI unit monitoring
· Rye Meads recently used for experimental study of fish predation by cormorants
· Monitoring of recently created reedbed at Rye Meads

26 Current conservation education

Various activities organised by Lee Valley Regional Park Authority. Schools visits to Rye Meads RSPB reserve. Projects by University of Hertfordshire students. The Heritage Lottery Fund is currently considering a partnership bid for funds for a new visitor centre at Rye Meads.

27 Current recreation and tourism

The whole site is within the Lee Valley Regional Park, with a large area forming the River Lee Country Park. 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 (although they may reduce the potential for enhancing the interest).

28 Functional jurisdiction

Department of the Environment, Transport and the Regions

29 Management authority

English Nature
Essex, Hertfordshire and London Team
Harbour House
Hythe Quay
Colchester
Essex
CO2 8JF
UK
Tel: 01206 796666
Fax: 01206 794466

30 Bibliography

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Ramsar Convention on
Wetlands of International Importance Especially as Waterfowl Habitat

Name: Lee Valley

Unitary Authority/County: Essex, Hertfordshire, London Borough of Haringey and London Borough of Waltham Forest.

Consultation proposal: Amwell Quarry Site of Special Scientific Interest (SSSI), Rye Meads SSSI, Turnford & Cheshunt Pits SSSI and Walthamstow Reservoirs SSSI have been recommended as a Ramsar site because of their international importance.

The Lee Valley Ramsar site comprises a series of embanked water supply reservoirs, sewage treatment lagoons and former gravel pits that display a range of man-made and semi-natural wetland and valley bottom habitats.

Boundary of Ramsar site: The Ramsar site boundary is coincident with the above SSSI boundaries. See Ramsar site map for further detail.

Size of Ramsar site: The Ramsar site covers an area of 447.87 ha.

International importance of Ramsar site: The Ramsar site is a Wetland of International Importance because:

a) the site qualifies under **criterion 2** because it supports vulnerable, endangered, or critically endangered species or threatened ecological communities:

   i) The nationally scare plant species whorled water-milfoil *Myriophyllum verticillatum.*

   ii) The rare or vulnerable invertebrate species *Micronecta minutissima* (a water boatman).

b) the site qualifies under **criterion 6** because it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird:

Waterbird species	5 year peak mean 1993/94 -1997/98	% of population
Shoveler *Anas clypeata*	406 individuals - wintering	1.0% NW/Central Europe
Gadwall *Anas strepera*	456 individuals - wintering	1.5% NW Europe

Bird figures from: WeBS database

Non-qualifying species of interest
In addition, the site supports nationally important numbers of cormorant *Phalacrocorax carbo*, great crested grebe *Podiceps cristatus*, tufted duck *Aythya fuligula*, pochard *Aythya ferina,* grey heron *Ardea cinerea* and bittern *Botaurus stellaris.*

Status of Ramsar site
Lee Valley was designated as a Ramsar site on 22 September 2000.

Appendix 5 – Natural England citation, Views About Management (VAM) and condition survey for Rye Meads SSSI

File ref: WCS/518

County: Hertfordshire **Site Name: Rye Meads**

District: East Hertfordshire

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981

Local Planning Authority: East Hertfordshire District Council

National Grid Reference: TL 385105 **Area:** 58.5 (ha) 114.5 (ac)

Ordnance Survey Sheet 1: 50 000: 166 **1: 10 000:** TL 30 NE, TL 31 SE

Date Notified (Under 1949 Act): - **Date of Last Revision:** -

Date Notified (Under 1981 Act): 1989 **Date of Last Revision:** -

Other Information:

This is a new site. Included within the site is Rye House Marsh RSPB Reserve (part). The Hertfordshire and Middlesex Wildlife Trust are tenants of one of the Meadows. The other meadow and the lagoons are owned by Thames Water. The site lies within the Lea Valley Regional Park.

Description and Reasons for Notification:

The Rye Meads meadows are the last substantial remnants of ancient flood-meadows on the rich alluvial soils of the Lea Valley. The site supports one of the largest areas of tall fen vegetation in the county and provides a valuable habitat for locally uncommon plants and for birds. This habitat has been reduced in extent significantly, both locally and nationally, by drainage and agricultural improvements, and it is now a rare habitat in Hertfordshire.

The tall mixed fen is co-dominated by Reed Canary-grass *Phalaris arundinacea*, Common Reed *Phragmites australis*, Meadowsweet *Filipendula ulmaria*, Lesser Pond-sedge *Carex acutiformis* and abundant Common Meadow-rue *Thalictrum flavum*, a species uncommon elsewhere in the county. In places Common Reed becomes dominant, forming a single species swamp. Other frequent species are Great Willowherb *Epilobium hirsutum*, Water Mint *Mentha aquatica*, Gipsywort *Lycopus europaeus* and Marsh Woundwort *Stachys palustris*. Species more characteristic of original flood-meadow conditions persist and include Marsh-marigold *Caltha palustris*, Ragged Robin *Lychnis flos-cuculi* and Skullcap *Scutellaria galericulata*.

Areas of marshy grassland dominated by rushes *Juncus spp*., and sedge dominated fen also occur. Frequent species include Soft Rush *J. effusus*, Round-fruited Rush *J. compressus* and Blunt-flowered Rush *J. subnodulosus*. Brown Sedge *Carex disticha* and Greater Tussock-sedge

cont...

Views About Management

ENGLISH NATURE

A statement of English Nature's views about the management of Rye Meads Site of Special Scientific Interest (SSSI).

This statement represents English Nature's views about the management of the SSSI for nature conservation. This statement sets out, in principle, our views on how the site's special conservation interest can be conserved and enhanced. English Nature has a duty to notify the owners and occupiers of the SSSI of its views about the management of the land.

Not all of the management principles will be equally appropriate to all parts of the SSSI. Also, there may be other management activities, additional to our current views, which can be beneficial to the conservation and enhancement of the features of interest.

The management views set out below do not constitute consent for any operation. English Nature's written consent is still required before carrying out any operation likely to damage the features of special interest (see your SSSI notification papers for a list of these operations). English Nature welcomes consultation with owners, occupiers and users of the SSSI to ensure that the management of this site conserves and enhances the features of interest, and to ensure that all necessary prior consents are obtained.

Management Principles

Artificial standing waterbodies

Artificial standing waterbodies include manmade lakes, reservoirs, gravel pits, subsidence pools, and flooded peat diggings. They may support wildlife equal to that of natural lakes, and can be important habitats for a range of specialised aquatic plant and animal species. They often support important populations of wintering wildfowl and breeding bird assemblages, as well as a varied invertebrate fauna (in particular dragonflies and damselflies).

Conservation value is largely determined by structural diversity and water quality. Increases in the amount of nutrients within the waterbody can lead to a loss of aquatic plants in favour of excessive growths of algae. This may result in a fundamental shift in the way a waterbody functions, reducing plant and invertebrate abundance and diversity, both of which are important food sources for a range of wetland birds. Increases in the amount of sediment entering a lake may smother stony beds and plants, reduce water depth in shallow lakes and also increase the amount of nutrients present.

Sympathetic management of water levels is necessary for the maintenance of optimal water depths throughout the year (according to the requirements of the plant and

animal species present). For example, the presence of extensive shallow water and wet marginal substrates will provide the feeding conditions required by a variety of wintering, passage and breeding wildfowl, such as dabbling ducks and waders, whilst other species may require areas of water at least 3 metres in depth. Water level management should take into account the requirements of submerged aquatic plants that are restricted to areas where there is sufficient light for growth and minimal wave action. In shallow waterbodies (with an average water depth of less than 3 metres) plants may be able to grow throughout the waterbody, whilst in deeper waters plants will be restricted to the shallow margins. Changes in waterlevels can also alter nutrient regimes.

Management should aim to maintain the habitats associated with shallowly sloping margins that are not too exposed to wave action, as they are important for many species associated with standing open waters. For example, the maintenance of structural diversity within and between stands of aquatic vegetation (including emergent, floating and submerged vegetation) can provide important habitat for the immature stages of different dragonfly and damselfly species that require a wide variety of vegetation types.

Artificial waterbodies are susceptible to the introduction of invasive species, such as non-native crayfish, bottom feeding coarse fish, and plant species such as Australian swamp stonecrop, therefore some management may be necessary to control these. Where native crayfish are present any measures which may limit the risks of transferring non-native crayfish or crayfish plague (such as information and awareness-raising initiatives amongst visitors to the waterbody) should be encouraged. The control or removal of the natural aquatic vegetation can lead to a decrease in aquatic plants in favour of algae, and should therefore be avoided.

Standing waters and their surroundings are often also a popular environment for recreational activities such as angling and boating which should be managed sympathetically to avoid conflict with the management of the waterbody for nature conservation.

Swamp

Swamp habitats develop on the fringes of open water, or in shallow depressions with permanent standing water. The plants may be rooted in the submerged soil or form a floating mat of inter-twined roots, rhizomes and stems. Swamps usually consist of a dominant single species of plant (e.g. reeds, tussock sedges, reedmace, reed sweet grass, reed canary grass and bull rushes) with a few other species thinly distributed among them. In common with most other types of wetland, swamps represent a transient stage in the change from open water to dry land.

Management should either seek to retain swamp communities in the same place or should acknowledge the dynamics of succession by ensuring there is always a new niche for the swamp communities to develop in. The succession from swamp into floodplain fen, for example, as the diversity of species present increases, may be slowed by raising the water table and by periodically removing any encroaching scrub. If the vegetation surface of the whole wetland appears to be building up or drying out for some other reason it may be necessary to lower the ground level by

creating scrapes or ponds. A programme of rotational cutting to maintain the reedbed may be necessary to encourage the vigorous growth of reed whilst preventing excessive build up of litter. Cutting should take place during the winter (November – March) and all cut material should be removed.

Management should ensure that appropriate water quality is maintained according to the requirements of the wetland communities present. Where swamp is in continuity with a waterbody, the water quality in the waterbody will affect the swamp. While some communities, such as reed swamp are unlikely to be very sensitive to nutritional enrichment, others, such as tussock sedge and narrow leaved reedmace, will be out-competed by other species (e.g. reed or reed sweet grass) where any increase in the amount of nutrients present occurs.

Swamp habitats have often survived where the vegetation has traditionally been cut for a variety of purposes, including use as building materials or animal bedding. It may be beneficial to consider re-instating these traditional management practices where they are not in conflict with other nature conservation objectives, such as the specific requirements of certain birds or invertebrates.

Wet grassland with breeding and wintering bird interest

Wet grasslands occur on land that is subject to periodic flooding or has a seasonally high water table and is waterlogged for much of the year. Wet grassland often supports a wide variety of plants and animals, in particular birds and invertebrates, and is an important habitat for breeding waders and wintering wildfowl.

Wet grassland requires active management if it is to retain its conservation interest. Generally, each year's growth of vegetation must be removed. Otherwise the sward becomes dominated by tall, vigorous grasses and rushes which, together with an associated build up of dead plant matter, suppress less vigorous species and lower the botanical richness of the sward. Traditionally, this management is achieved by grazing. Cattle are often the preferred stock, being relatively tolerant of wet conditions and able to control tall grasses and rank vegetation. Cattle also tend to produce a rather uneven, structurally diverse sward. However, ponies, or even hill sheep, can be used if necessary. Grazing usually takes place at times between late spring and early autumn, but the precise timing and intensity will depend on local conditions and requirements, such as the need to avoid trampling ground-nesting birds. Heavy poaching should be avoided but light trampling can be beneficial in breaking down leaf litter and providing areas for seed germination. Agricultural operations in general should be avoided before mid-June to minimise disturbance to breeding birds or the destruction of nests. An element of managed scrub, both within and fringing a field can be of importance to birds and invertebrates, as can a surrounding hedge.

Partial winter flooding is important in maintaining suitable habitat conditions for wintering birds. A mosaic of winter flooded grassland and permanently un-flooded grassland is desirable, with both temporary and permanent pools present. The maintenance of a mosaic of shallow surface pools and un-flooded areas during the winter will provide roosting and feeding habitat for wintering wildfowl and waders. From April onwards, the area of standing surface water should be reduced to increase

the area available for nesting waders and also by concentrating aquatic invertebrates in small pools to provide suitable feeding areas for their young. Some shallow areas of flooding should be maintained until late June to provide patches of bare muddy ground on which the birds and their young can feed as raised sward height makes feeding on the drier areas more difficult. The birds using these features are directly vulnerable to disturbance, which can cause them to lose time spent feeding or drive them to areas with a poorer supply of food. Management should seek to minimise any harmful disturbance, especially at times when bird populations are under stress, such as severely cold conditions. Predators, especially crows and related species, should be controlled and this may be best achieved by limiting their nesting sites.

Careful maintenance of existing ditches and drains is usually acceptable practice, but abandonment or deepening of ditches can be harmful.

All habitats

The habitats within this site are highly sensitive to inorganic fertilisers and pesticides, applications of which should be avoided both within the site itself and in adjacent surrounding areas. Herbicides may be useful in targeting certain invasive species, but should be used with extreme care. Access to this site, and any recreational activities within, may also need to be managed.

Rye Meads (cont...)

C. paniculata are found together with patches of Common Spike-rush *Eleocharis palustris* and Marsh Horsetail *Equisetum palustre*. Herbs present include the locally uncommon Fen Bedstraw *Galium uliginosum*. Additional habitats are provided by open water, Reed Sweet-grass *Glyceria maxima* dominated swamp and Willow *Salix sp*. carr.

The site is important for breeding and wintering birds. In hard weather the lagoons support concentrations of Tufted Duck *Aythya fuligula*, Shoveler *Anas clypeata* and Gadwall *Anas strepera* of national importance. The tall fen areas are used by wintering birds, notably Snipe *Gallinago gallinago*, Water Rail *Rallus aquaticus*, Bittern *Botaurus stellaris* and Bearded Tit *Panurus biamicus*, the last three species occurring here at their highest concentrations in the London basin.

The lagoons support the region's largest colony of Common Tern *Sterna hirundo* which breed very successfully on floating rafts. The lagoon banks hold a nationally important breeding concentration of Tufted Ducks and duckling survival is high compared to other sites in the Lea Valley.

Condition of SSSI units

Compiled: 01 Jan 2014

See the SSSI glossary for an explanation of terms.

Team - Four Counties - **SSSI name** - Rye Meads - **Staff member responsible for site** - Neil Fuller

Region	County	District	Main habitat	Staff member responsible for unit	Unit number	Unit ID	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment	Reason for adverse condition
East Of England	Hertfordshire	East Hertfordshire	Fen, marsh and swamp - lowland	Neil Fuller	1	1024191	7.20	09 Mar 2013	Favourable	The wet grassland supports a good flora in favourable condition with notable presence of meadow rue, ragged robin and marsh marigold. Furthermore, contributes additional swamp fen habitat for breeding tufted duck and overwintering bittern.	
East Of England	Hertfordshire	East Hertfordshire	Fen, marsh and swamp - lowland	Neil Fuller	2	1011299	11.22	09 Mar 2013	Favourable	The wet grassland supports a good flora in favourable condition with notable presence of meadow rue, ragged robin and marsh marigold. Furthermore, contributes additional swamp fen habitat for overwintering bittern.	
East Of England	Hertfordshire	East Hertfordshire	Standing open water and canals	Neil Fuller	3	1011308	17.02	09 Mar 2013	Unfavourable recovering	The open water habitats are regarded as favourable supporting populations of overwintering gadwall, shoveler & breeding tufted duck. However, the non-breeding population of tufted duck (unit 3-5) and breeding pairs of common tern are currently unfavourable and there is a need for an ongoing investigation with action to seek to adequately address this.	
East Of England	Hertfordshire	East Hertfordshire	Standing open water and canals	Neil Fuller	4	1011307	5.51	09 Mar 2013	Unfavourable recovering	Mosaic of swamp & reedbed, in favourable condition for extent and quality features including regularly visiting o/w bittern. Furthermore, the open water habitats support favourable populations of the listed overwintering wetland ducks (gadwall, shoveler) & breeding tufted duck. However, the non-breeding population of tufted duck (unit 3-5) and breeding pairs of common tern are currently unfavourable and there is a need for an ongoing investigation with action to seek to adequately address this.	
East Of England	Hertfordshire	East Hertfordshire	Standing open water and canals	Neil Fuller	5	1011311	13.68	09 Mar 2013	Unfavourable recovering	Mosaic of swamp, reedbed & wet woodland in favourable condition for extent and quality features. Furthermore, the open water habitats support favourable populations of the listed overwintering wetland ducks (gadwall, shoveler) & breeding tufted duck and the reedbed regularly supports overwintering bittern. However, the non-breeding population of tufted duck (unit 3-5) and breeding pairs of common tern are currently unfavourable and there is a need for an ongoing investigation with action to seek to adequately address this.	
East Of England	Hertfordshire	East Hertfordshire	Standing open water and canals	Neil Fuller	6	1011314	5.66	09 Mar 2013	Favourable	Mosaic of swamp & reedbed in favourable condition for extent and quality features including regularly supporting overwintering bittern.	

Report completed.