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HRA of the Forest Heath Core Strategy Single Issue Review Preferred Option Document

Prepared by LUC
March 2016

Project Title: HRA of the Forest Heath Core Strategy Single Issue Review Preferred Option Document

Client: Forest Heath District Council

Version	Date	Version Details	Prepared by	Checked by	Approved by
2.0	23/03/2016	Final for consultation	Jon Pearson	Jon Pearson	Jeremy Owen

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1 Introduction

1.1 LUC has been contracted by Aecom on behalf of Forest Heath District Council to carry out the Habitats Regulations Assessment (HRA) Screening of the Forest Heath Single Issue Review (SIR) of Core Strategy Policy CS7 Overall Housing Provision and Distribution and of the Site Allocations Local Plan (SALP). This report documents the results of the HRA Screening at the third Regulation 18 Consultation stage of preparation of the SIR.

Background to the Forest Heath SIR and Site Allocations Local Plan

1.2 Forest Heath's Core Strategy was adopted in May 2010. Parts of Policy CS7 were, however, subsequently quashed following a successful High Court challenge (with consequential amendments also made to Policies CS1 and CS13). Essentially, the quashing of Policy CS7 removed the spatial strategy, although there remains in place a policy to deliver a certain growth quantum over the plan period. As a result, Forest Heath District Council ('the Council') has resolved to revisit those parts of the Core Strategy that were quashed by the High Court ruling in order to reconsider the most appropriate locations for housing growth across the District. The plan now in development is known as the Core Strategy Single Issue Review (SIR). As well as addressing the spatial strategy, the SIR will revisit the overall growth quantum policy, an approach that is necessary in order to ensure a holistic strategy is in place, and also necessary given NPPF (para 47) policy on meeting full, objectively assessed housing needs.

1.3 A SIR 'Issues and Options' consultation document was published in July 2012 with a view to: 1) exploring alternative housing growth quanta (ranging from 351 dwellings per annum 'dpa' to 669 dpa); and 2) presenting information on the constraints/opportunities at each of the main settlements in order to gather views on the proportion of growth that should be distributed to each. The responses received were subsequently considered by Officers and Members, and were used to inform preparation of a Proposed Submission (Regulation 19) consultation document.

1.4 At about this time, in November 2013, the Planning Committee also approved a Site Allocations Local Plan (SALP) 'Issues and Options' document for consultation. Issues and options relating to site allocations had been in development for a number of years, although no formal consultation had taken place. However, the decision was subsequently taken not to proceed with consultation on the two documents as further SA work was required. Consideration was given to progressing the two documents in the form of a single, 'new style' Local Plan.

1.5 In January 2015, however, a Local Development Scheme Update was published, which committed to progressing the two plan documents (SIR and SALP) separately. Following on from the Issues and Options consultations held in 2012 and 2015, the third Regulation 18 consultation document which is the subject of this HRA Report sets out the Council's preferred option for the level of housing to be provided within the district and two alternative housing distribution options, one of which is the Council's preferred option.

1.6 In addition to these strategic planning policy and site allocations documents, the Council adopted a joint development management policies Local Plan document with neighbouring St Edmundsbury District in February 2015.

The need for HRA

1.7 The requirement to undertake HRA of development plans was confirmed by the amendments to the "Habitats Regulations" published for England and Wales (UK Government, 2007) and subsequently updated (UK Government, 2010). Therefore, when preparing the SIR, the Council is required by law to carry out an HRA.

1.8 HRA refers to the assessment of the potential effects of a development plan on one or more European sites, including Special Protection Areas (SPAs) and Special Areas of Conservation (SACs):

- SPAs are classified under the European Council Directive 'on the conservation of wild birds' (79/409/EEC; 'Birds Directive') for the protection of wild birds and their habitats (including particularly rare and vulnerable species listed in Annex 1 of the Birds Directive, and migratory species).
- SACs are designated under the Habitats Directive and target particular habitats (Annex 1) and/or species (Annex II) identified as being of European importance.

1.9 Potential SPAs (pSPAs)[1], candidate SACs (cSACs)[2], Sites of Community Importance (SCIs)[3] and Ramsar sites should also be included in the assessment.

- Ramsar sites support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention, 1971).

1.10 For ease of reference during this HRA, these designations are collectively referred to as 'European sites' (despite Ramsar designations being at the international level).

1.11 The HRA of development plans is undertaken in stages (as described below) and should conclude whether or not a proposal would adversely affect the integrity of the European site in question.

1.12 Although there is no requirement to undertake HRA at an early stage of the plan-making process when options are still being identified, the Council decided to begin the HRA at the Regulation 18 consultation stage of the SIR so that it can help to inform selection and refinement of Plan options.

Stages of HRA

1.13 Table 1.1 summarises the stages and associated tasks and outcomes typically involved in carrying out a full HRA, based on various guidance documents (European Commission, 2001) (DCLG, 2006) (RSPB, 2007).

Table 1.1 Stages in HRA

Stage	Task	Outcome
Stage 1: HRA Screening	Description of the development plan. Identification of potentially affected European sites and factors contributing to their integrity. Review of other plans and projects. Assessment of likely significant effects of the development plan alone or in-combination with other plans and projects.	Where effects are unlikely, prepare a 'finding of no significant effect report'. Where effects judged likely, or lack of information to prove otherwise, proceed to Stage 2.
Stage 2: Appropriate Assessment (where Stage 1 does not rule out likely significant effects)	Information gathering (development plan and European Sites). Impact prediction. Evaluation of development plan impacts in view of conservation	Appropriate assessment report describing the plan, European site baseline conditions, the adverse effects of the plan on the European site, how these effects will be avoided through, firstly, avoidance, and secondly, mitigation including the

[1] Potential SPAs are sites that have been approved by Government and are currently in the process of being classified as SPAs.
[2] Candidate SACs are sites that have been submitted to the European Commission, but not yet formally adopted.
[3] SCIs are sites that have been adopted by the European Commission but not yet formally designated as SACs by the Government.

Stage	Task	Outcome
	objectives. Where impacts are considered to affect qualifying features, identify and assess alternative development options. If no alternatives exist, define and evaluate mitigation measures, where necessary.	mechanisms and timescale for these mitigation measures. If effects remain after all alternatives and mitigation measures have been considered proceed to Stage 3.
Stage 3: Assessment where no alternatives exist and adverse impacts remain taking into account mitigation	Identify 'imperative reasons of overriding public interest' (IROPI). Demonstrate no alternatives exist. Identify potential compensatory measures.	This stage should be avoided if at all possible. The test of IROPI and the requirements for compensation are extremely onerous.

1.14 In assessing the effects of a Local Plan in accordance with Regulation 102 of the Conservation of Habitats and Species Regulations, there are potentially two tests to be applied by the competent authority: a 'Significance Test', followed if necessary by an Appropriate Assessment which would inform the 'Integrity Test'. The relevant sequence of questions is as follows:

- Step 1: Under Reg. 102(1)(b), consider whether the plan is directly connected with or necessary to the management of the sites. If not, as is the case for the Forest Heath SIR and SALP, proceed to Step 2.
- Step 2: Under Reg. 102(1)(a) consider whether the plan is likely to have a significant effect on the European site, either alone or in combination with other plans or projects (the 'Significance Test'). If yes, proceed to Step 3.
- *[Steps 1 and 2 are undertaken as part of Stage 1: HRA Screening in Table 1.1.]*
- Step 3: Under Reg. 102(1), make an Appropriate Assessment of the implications for the European site in view of its current conservation objectives (the 'Integrity Test'). In so doing, it is mandatory under Reg. 102(2) to consult Natural England, and optional under Reg. 102(3) to take the opinion of the general public.
- [*This step is undertaken during Stage 2: Appropriate Assessment shown in* Table 1.1.*]*
- Step 4: In accordance with Reg. 102(4), but subject to Reg. 103, give effect to the land use plan only after having ascertained that the plan would not adversely affect the integrity of the European site.
- Step 5: Under Reg. 103, if Step 4 is unable to rule out adverse effects on the integrity of a European site and no alternative solutions exist then the competent authority may nevertheless agree to the plan or project if it must be carried out for 'imperative reasons of overriding public interest (IROPI).

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

1.16 The HRA should be undertaken by the 'competent authority', in this case Forest Heath District Council, and LUC has been commissioned to do this on the Council's behalf. The HRA also requires close working with Natural England as the statutory nature conservation body[4] in order to obtain the necessary information, agree the process, outcomes and mitigation proposals. The Environment Agency, while not a statutory consultee for the HRA, is also in a strong position to

[4] Regulation 5 of the Habitats Regulations 2010.

provide advice and information throughout the process as it is required to undertake HRA for its existing licences and future licensing of activities.

HRA work carried out previously

1.17 The issues surrounding the potential effects of development in Forest Heath District and neighbouring districts on European sites have been heavily studied and these studies have informed an extensive body of previous HRA work. The HRA of the Core Strategy (Forest Heath District Council, 2009) was, in turn, subject to extensive consultation with Natural England and other stakeholders (notably the RSPB) in order to reach agreement on a suitable approach. We have taken this previous body of work as the starting point in formulating the assumptions to be made in carrying out the HRA of the SIR and SALP. We have also reviewed further relevant information that has been published since that HRA was carried out and considered whether this suggests a need to amend the previously adopted approach. To date, no primary data collection (e.g. breeding bird surveys or visitor surveys) has been carried by LUC out to inform the HRA.

1.18 An HRA Report was produced to accompany the August 2015 consultation on the 'Issues and Options' version of the SIR. A number of consultation comments were received on the HRA and these are documented in Appendix 3, along with LUC's responses to them.

Structure of the HRA report

1.19 This chapter has introduced the background to the production of the Forest Heath SIR and the requirement to undertake HRA. The remainder of the report is structured as follows:

- **Chapter 2: The Single Issue Review (SIR) of Core Strategy Policy CS7** summarises the content of the third Regulation 18 consultation version of the SIR which is the subject of this HRA report.
- **Chapter 3: HRA Screening methodology** outlines the approach to identifying 'likely significant effects', identifies the European sites potentially affected by the SIR (detailed information is provided in Appendix 2) and considers the other plans and projects with which the SIR could act in combination to have a significant effect on a European site.
- **Chapter 4: Information used and assumptions made in the HRA** identifies the potential effects which the SIR could have on European sites, summarises information relevant to assessing each of them and states the assumptions made in carrying out the HRA.
- **Chapter 5: HRA Screening of total housing provision** describes the preferred option for the level of housing to be provided within the district and assesses its potential to have likely significant effects on European sites.
- **Chapter 6: HRA Screening of housing distribution options** describes the two alternative housing distribution options, one of which is the Council's preferred option, and provides a screening assessment of each.
- **Chapter 7: Conclusions and recommendations** summarises the potential likely significant effects identified and then considers the effect of any existing mitigation before reaching an HRA Screening conclusion. Where likely significant effects cannot be ruled out, recommendations are provided. The consultation process and next steps are then described.

2 The Single Issue Review (SIR) of Core Strategy Policy CS7

2.1 Following on from the Issues and Options consultations held in 2012 and 2015, this third Regulation 18 consultation sets out the Council's preferred option for the level of housing to be provided within the district and two alternative housing distribution options, one of which is the Council's preferred option. It is being carried out in parallel with consultation on the Preferred Options SALP which sets out the Council's preferred sites for housing growth in the Towns, Key Service Centres and Primary Villages of Forest Heath District.

3 HRA Screening methodology

3.1 The Habitats Regulations do not prescribe a particular methodology for carrying out the appraisal of a plan, or how to report the outcome. In the continuing absence of finalised Government guidance, the former DCLG's 2006 consultation paper on Appropriate Assessment of Plans (DCLG, 2006) remains the principal official guidance. We have also had regard to other guidance of relevance to the HRA of land use plans, for example: (European Commission, 2001) (ODPM, 2005) (Natural England, 2007) (Dodd A.M., 2007) (DEFRA, 2012) (David Tyldesley Associates, 2015).

3.2 HRA Screening of the SIR Preferred Option document has been undertaken in line with this and seeks to meet the requirements of the Habitats Regulations.

Assessment of 'likely significant effects' of the SIR

3.3 As required under Regulation 102 of the Conservation of Habitats and Species Regulations 2010[5] an assessment has been undertaken of the 'likely significant effects' of the SIR Preferred Option document.

3.4 The assumptions made and information used during the HRA Screening in reaching conclusions about likely significant effects on European sites are set out in Chapter 4.

3.5 The tasks carried out as part of the HRA Screening have already been summarised in Table 1.1 (Stage 1). They are described more fully along with their results in Chapter 5 (for the total housing provision) and Chapter 6 (for the housing distribution options).

Interpretation of 'likely significant effect'

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

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

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

3.8 Another opinion delivered to the Court of Justice of the European Union[7] commented that:

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

3.9 This opinion (the 'Sweetman' case) therefore allows for the authorisation of plans and projects whose possible effects, alone or in combination, can be considered 'trivial' or *de minimis*; referring

[5] SI No. 2010/490

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

[7] *Advocate General's Opinion to CJEU in Case C-258/11 Sweetman and others v An Bord Pleanala* 22nd Nov 2012.

to such cases as those *"that have no appreciable effect on the site"*. In practice such effects could be screened out as having no likely significant effect; they would be 'insignificant'.

3.10 Based on the above, a risk-based approach involving the application of the precautionary principle was adopted in the assessment, such that a conclusion of 'no significant effect' was only reached where it was considered unlikely, based on current knowledge and the information available, that a SIR proposal/option would have a significant effect on a European site.

European sites

3.11 This section identifies and describes the European sites that could be affected by the SIR. The sites included are consistent with those scoped into the HRA of the Core Strategy (Forest Heath District Council, 2009).

3.12 It is common practice in HRA screening to define a buffer around the plan area as a starting point to identifying European sites to be examined and this approach has been accepted by Natural England elsewhere. This reflects the fact that development-related activities such as water abstraction, waste water discharge, air pollution from traffic, and increased recreation can have effects well beyond the Plan area. Some of these European sites may then be scoped out or more distant ones added, depending on the pathways that exist for potentially significant effects to occur.

3.13 A precautionary buffer distance of 20 km has been used to reflect evidence from studies in other parts of the country that coastal sites or large tracts of semi-natural habitat can attract a relatively high proportion of residents from up to 20 km away from the site. This encompasses seven SACs, two SPAs, and four Ramsar sites that lie entirely or partly within 20 km of the Forest Heath District boundary, as follows:

- SACs: Breckland, Devil's Dyke, Rex Graham Reserve, Fenland, Norfolk Valley Fens, Ouse Washes, Waveney and Little Ouse Valley Fens.
- SPAs: Breckland, Ouse Washes.
- Ramsar sites: Chippenham Fen, Ouse Washes, Redgrave and South Lopham Fens, Wicken Fen.

3.14 The locations of these European sites in relation to the Forest Heath District boundary are shown in Figure 3.1.

3.15 The HRA also considers the potential for effects on the three additional, more distant European sites in the area of The Wash since the District's main rivers drain into them and their qualifying features include ones which are sensitive to deterioration in water quality. The list of sites within the 20 km buffer has been further adjusted by screening out two European sites from the list above from any further consideration for the following reasons:

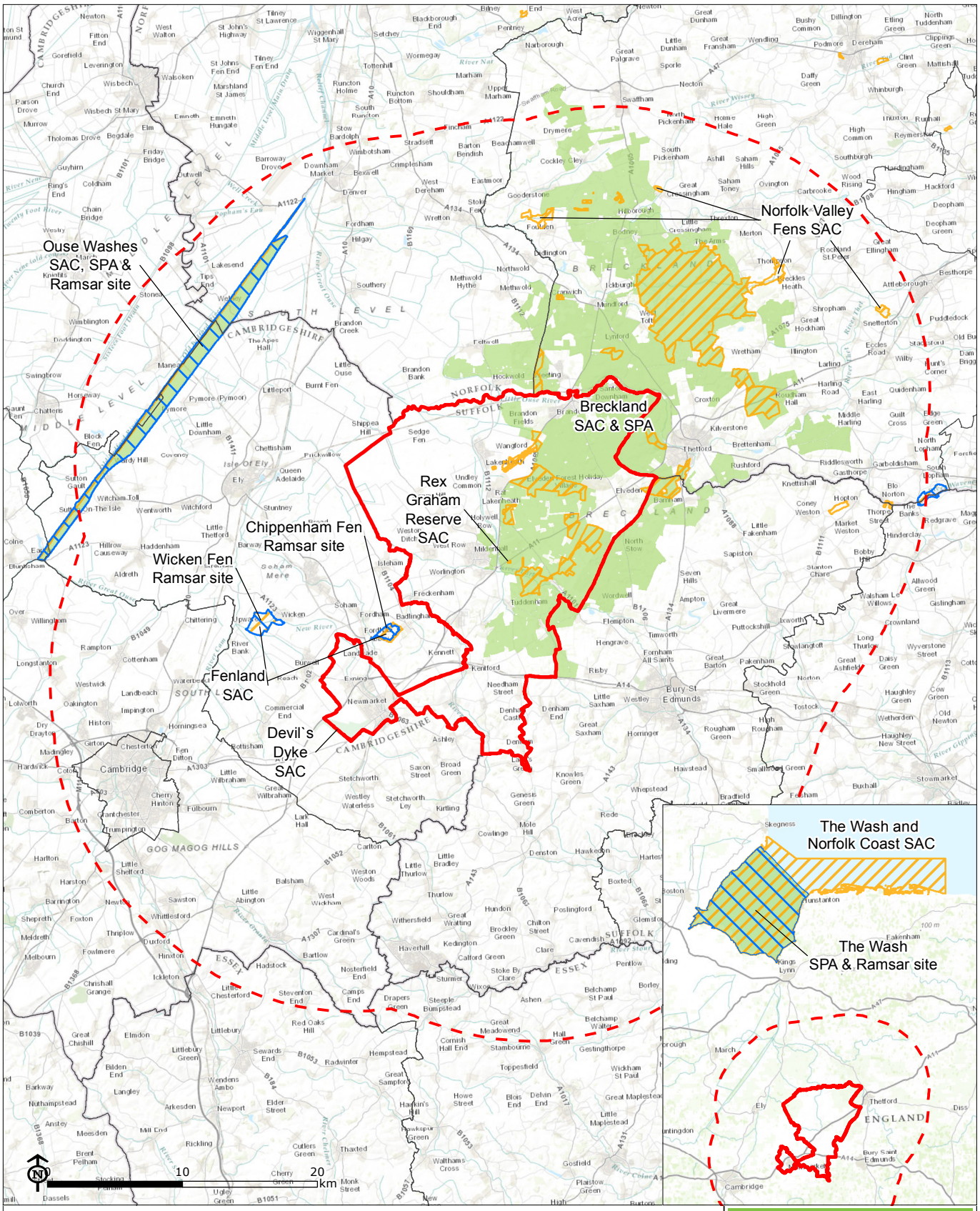
- Waveney and Little Ouse Valley Fens SAC: The three sites which make up this SAC are located right on the eastern edge of the 20 km buffer. Overall the sites are unlikely to attract significantly increased numbers of visitors due to their location. They are upstream of any development which will occur in Forest Heath and it is understood that water abstraction and wastewater discharges for developments in Forest Heath will not affect this European site.
- Redgrave and Lopham Fen Ramsar site: This site is also part of the Waveney and Little Ouse Valley Fens SAC and lies on the eastern edge of the 20 km buffer. Although the site has a visitor centre and is relatively well known, it is unlikely that development in Forest Heath will result in significantly increased visitor numbers due to the site's distance from the District, and the existence of alternative recreational areas closer to or within Forest Heath District, such as large parts of the extensive Thetford Forest. The SAC is upstream of Forest Heath and it is understood that water abstraction or discharges in Forest Heath will not affect the site.

3.16 The HRA of the SIR therefore considers the European sites set out in Table 3.1.

Table 3.1 European sites scoped into the HRA

SAC	SPA	Ramsar site
Sites lying wholly or partly within Forest Heath District		
Breckland Devil's Dyke Rex Graham Reserve	Breckland	-
Sites lying outside Forest Heath District but wholly or partly within 20 km of its boundary		
Fenland Norfolk Valley Fens Ouse Washes	Ouse Washes	Chippenham Fen Ouse Washes Wicken Fen
Sites lying entirely beyond 20 km of the Forest Heath District boundary but scoped into HRA due to hydrological connection		
The Wash and North Norfolk Coast	The Wash	The Wash

3.17 Appropriate information to inform HRA screening on the scoped-in European sites is set out in Appendix 2. This covers a narrative description of the site, a summary of the reasons for its designation as a European site, notes on pressures and threats facing the site's designated features, and conservation objectives.



Forest Heath Local Plan HRA

Figure 3.1 European Sites Scoped into the HRA

Source: JNCC. Natural England

LUC

Map Scale @ A4: 1:400,000

Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

CB:JH EB:Green_C LUCGLA 6446-01_003_Fig3-1_European_Sites_Scoped_HRA 15/03/2016

Review of other plans and projects for 'in-combination' effects

Regulatory requirements and guidance

3.18 Regulation 102 of the Habitats Regulations 2010 (UK Government, 2010) requires an Appropriate Assessment of '*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 plan or projects*'.

3.19 Natural England guidance on this requirement is as follows:

"The alone or in-combination requirement has been included in the Directive and Regulations in order to make sure that the effects of numerous small activities, which alone would not result in a significant effect, are assessed to determine whether their combined effect would be significant, and therefore require more detailed assessment. It is only the effects of those plans and projects that are not themselves significant alone which are added into an in combination assessment. The assessment should only include those that genuinely result in a combined effect, which impairs the ability of an interest feature to meet its conservation objectives.

In-combination assessment should include all plans or projects that have consent or authorisation but are not yet complete, and those that are the subject of an application for consent or authorisation, but are not yet determined. The following list outlines the types of plans and projects that should be considered for an in combination assessment:

- *The incomplete or non-implemented parts of plans or projects that have already commenced;*
- *Plans or projects given consent or given effect but not yet started.*
- *Plans or projects currently subject to an application for consent or proposed to be given effect;*
- *Projects that are the subject of an outstanding appeal;*
- *Ongoing plans or projects that are the subject of regular review.*
- *Any draft plans being prepared by any public body*
- *Any proposed plans or projects published for consultation prior to application."*

3.20 HRA guidance (David Tyldesley Associates, 2015) states that the testing of a plan's effects in-combination with those of other plans and projects need only consider those effects (of the plan being assessed and those of other plans or projects) which, when acting alone rather than in-combination, have been assessed as minor. There is no need to consider policies or proposals that could not have any effect on a European site. There is also no need to consider any policies or proposals that have already been assessed as likely to have a significant effect alone and therefore flagged up for Appropriate Assessment and, if necessary, for action to avoid or mitigate them. This in-combination test is, for example, relevant to plans which would have some potential effect on a European site, but that effect alone would not be likely to be significant, and there are other plans or projects that would add to the plan's effects, either by making them more likely, or more significant, or both.

Approach adopted in HRA of the SIR

3.21 The principles described above have been applied by first identifying other relevant plans and projects for the in-combination assessment. A large number of plan and strategy documents could potentially be considered. We have focussed our attention on county and district level plans which provide for development in Forest Heath and adjacent districts, and reviewed the findings of any associated HRA work for these plans, where available. To identify other projects which could result in a significant combined effect with the SIR, we reviewed the National Infrastructure Planning website but no projects were found that should also be considered for their potential in-combination effects on the European sites scoped into this HRA. In addition, the Council was asked whether it was aware of any such projects. This revealed a number of projects which have not yet been developed but for which planning consent has been sought from FHDC or in relation to which the Council has published an EIA scoping request for consultation. These are not included as preferred options in the SALP but are judged large enough to present a credible risk

that they might have significant effects in-combination with the SIR. The review of these plans and projects is set out in Appendix 1.

3.22 The review of other relevant projects proceeded as follows:

- Where project level HRA Screening had been unable to rule out likely significant effects, then the project could not proceed in its current form until Appropriate Assessment ruled out adverse effects on integrity. At that point, the Appropriate Assessment would need to consider the potential for the project to have effects in-combination with other plans and projects, including the Core Strategy SIR and SALP (once these reached draft plan / proposed submission stage) .
- Where project level HRA Screening had been carried out and likely significant effects had been ruled out or project level Appropriate Assessment had been carried out and adverse effects on integrity had been ruled out, a check was made to determine whether any effects were identified by the project level HRA which were judged to be minor but which could combine with minor effects of the SALP and other plans and projects considered in the in-combination assessment to become significant.
- Where a project had not yet advanced sufficiently through the planning process for project level HRA Screening to have been carried out, there was insufficient publicly available information to consider them in the in-combination assessment. Once the project advances to a stage where project level HRA Screening is carried out, this will need to consider the potential for it to have effects in-combination with other plans and projects, including the Core Strategy SIR and SALP (once these reach draft plan / proposed submission stage).
- Where planning consent has been sought but the Council determined that project level HRA Screening was not required, it was assumed that the project would not contribute to in-combination effects.

4 Information used and assumptions made in the HRA

FHDC deliverability study

4.1 Core Strategy Policy CS2 designates development 'constraint zones' designed to protect Breckland SPA. If the SIR and SALP provide for development within these constraint zones, this could call into question the deliverability of the Plan and its ability to rely on such sites to contribute to meeting objectively assessed needs. As a separate exercise to the HRA, the Council has therefore carried out an analysis to assess whether the proposed overall housing numbers and broad distribution across settlements set out in the Core Strategy SIR are deliverable in light of land availability and the European sites within Forest Heath District. To assess the deliverability of the SIR, site options included in the SALP (Further Issues and Options Consultation Document August 2015) were screened against European site buffers identified in the FHDC Core Strategy Policy CS2 and other criteria as follows:

- Outside of all Breckland SPA buffers defined by Policy CS2.
- Totally screened from the European site by built development.
- Would not advance the line of built development towards the European site.
- Have an extant planning permission.
- Have already been subject to a project level HRA which has concluded no likely significant effects.

4.2 The overall conclusion of the deliverability study was that the total housing number and distribution of houses proposed in the Single Issue Review Preferred Options is deliverable when taking into account the HRA constraint zones identified in the Core Strategy.

4.3 Notwithstanding the screening assessment described above, it is still necessary for the HRA of the SIR Preferred Options document to assess the potential for likely significant effects of the total housing provision and housing distribution options. The information used and assumptions made in carrying out the HRA Screening are set out in the remainder of this chapter.

Potential effects

4.4 Based on an examination of the designated features of the European sites scoped into this HRA and the nature of activities provided for by the SIR, the following types of potential effect on European sites have been considered:

- Direct loss or physical damage due to construction.
- Disturbance and other urban edge effects from construction or occupation of buildings.
- Disturbance from construction or operation of roads.
- Recreation pressure.
- Water quantity.
- Water quality.
- Air quality.

4.5 This section summarises information relevant to each of these potential effects, drawing on the HRA work previously undertaken in the District as well as more recent evidence. Based on this

evidence, the approach taken and assumptions made in carrying out the HRA of the Core Strategy SIR Preferred Option document are then described.

4.6 As explained under each type of effect, the potential for some types of effect is most appropriately assessed by reference to the total amount of housing development being proposed, as set out in the 'Total housing provision' section of the SIR. Other types of effect, are more appropriately assessed by reference to the amount of development proposed at broad locations (as set out in the 'Housing distribution options' section of the SIR) or by reference to the specific development sites being allocated (as set out in the SALP Preferred Options document being prepared and consulted on in parallel with the SIR). In some cases, although the potential effect was most appropriately assessed at a detailed scale, it was necessary to rule out the possibility that a likely significant effect could not be avoided under any conceivable spatial distribution of the housing provision, leading to assessment of the effect at more than one scale. Table 4.1 summarises scale/ level in the planning process at which each of the types of potential effect listed above has been assessed. Should emerging evidence (for example the forthcoming update to the Water Cycle Study) reveal any spatially-specific issues, these will be dealt with in the HRA at the appropriate scale during the preparation of the Proposed Submission SALP (Regulation 19 consultation stage).

Table 4.1 Scale at which each type of potential effect has been assessed

Potential effect	HRA of SIR 'Total housing provision'	HRA of SIR 'Housing distribution options'	HRA of individual site allocations in the SALP
Direct loss or physical damage due to construction			✓
Disturbance and other urban edge effects from construction or occupation of buildings		✓	✓
Disturbance from construction or operation of roads		✓	
Recreation pressure	✓	✓	✓
Water quantity		✓	
Water quality		✓	
Air quality		✓	

Direct loss or physical damage due to construction

4.7 Direct loss of or physical damage to designated habitats, or to habitats on which designated species rely, could result from the construction of new housing, employment space and so on. Construction could also cause direct mortality of designated species.

Approach to HRA Screening of Forest Heath SIR

4.8 Potential effects will depend on the exact location of development proposals and are therefore most appropriately assessed via HRA of the site-specific allocations set out in the SALP.

Disturbance and other urban edge effects from construction or occupation of buildings

4.9 The construction or occupation of new buildings provided for by the SIR could result in adverse effects on sensitive, designated species due to increases in noise and vibration or light pollution, the visual presence of buildings and people within the development boundary, or increased numbers of pets and other predators.

4.10 Other types of potential effect on designated species and habitats associated with increased public access are considered within the 'recreation pressure' effect category below.

European sites potentially affected

4.11 The European sites potentially affected are:

- Breckland SPA.

4.12 Disturbance and other urban edge effects from construction or occupation of buildings operate over relatively short distances. Based on a review of the designated features of the scoped-in European sites, the documented pressures and threats facing them and the locations of these sites in relation to Forest Heath District, the potential for disturbance and other urban edge effects from construction or occupation of buildings within the District only exists in relation to the designated bird species of Breckland SPA.

Relevant information

4.13 Considering the particular sensitivity of Breckland SPA's designated bird species to these types or urban edge effects, correlative studies of Stone Curlews (Sharp, et al., 2008), Nightjars (Clarke, et al., 2008) (Liley & Clarke, 2003) (Liley & Clarke, 2002) (Liley, et al., 2006) and Woodlarks (Mallord, 2005) have found lower densities of these species in areas close to housing or surrounded by high densities of housing. This avoidance is likely to be due to a range of factors, with individual ones difficult to tease apart. For example, although higher levels of recreational access may lead to harm from disturbance or increased fire occurrence, the avoidance of housing by stone curlews has been clearly demonstrated on arable land where there is limited public access (Sharp, et al., 2008). In addition, the large distances over which housing has been shown to have an effect by this research are such that increased public access and fire occurrence seem implausible explanations in isolation; these species may simply show a behavioural response to avoiding the built environment.

4.14 Analysis of the pattern of avoidance of housing by Stone Curlew on arable land suggests that the impact of housing on nest densities is negligible at a distance of 2.5 km from housing and that housing at 1 km has half the impact of housing immediately adjacent to potential nesting habitat (Sharp, et al., 2008).

4.15 Although the effect of buildings on Stone Curlew identified by research is from residential properties as opposed to commercial or other building types, that research advises caution in relation to non-residential development types due to the small sample size of these types of buildings in the study and difficulties with reliably classifying them (Clarke & Liley, 2013).

4.16 Research has failed to detect any evidence that screening (such as by shelter belts or landscaping) or reduced lighting levels around buildings might reduce avoidance of built development by Stone Curlew or allow the distance at which adverse effects occur to be reduced. Many fields do have existing shelterbelts, and the avoidance of housing is still clear across suitable arable land, suggesting that screening will not work as mitigation (Sharp, et al., 2008) (Clarke & Liley, 2013).

4.17 In relation to predation effects, evidence shows that pet cats can roam up to 1.5 km at night (Woods, et al., 2003) (Sims, et al., 2008). As well as pets, research has shown that heathland close to urban areas can have higher densities of mammalian predators such as foxes (Taylor, 2002) and that there is an increase in the numbers of crows and magpies on sites with greater human activity (Marzluff & Netherlin, 2006).

4.18 For nightjars there is also evidence of avoidance of housing but the sites where this has been studied tend to have lots of housing close by and lots of houses further away, making it virtually impossible to determine the distance to which housing has an effect (Liley, et al., 2006). In relation to avoidance of the direct effects of development on Woodlark or Nightjar (particularly in relation to cat predation), a 400 m 'no build zone' has been used to mitigate the effects of housing on heathland birds of The Dorset heaths and Thames Basin Heaths SPAs. The 400 m distance was chosen to minimise additional cat predation and visitor pressure on the heathlands adjacent to development.

4.19 The elements of this body of research available at the time of the HRA of the Core Strategy led, with the agreement of Natural England, to the designation in Core Strategy Policy CS2 of development 'constraint zones' designed to protect Breckland SPA, as shown in the following boxed extract from the Core Strategy.

Core Strategy Policy CS2 Natural Environment (extract)

New built development will be restricted within 1,500m of components of the Breckland SPA designated for Stone Curlew. Proposals for development in these areas will require a project level Habitat Regulations Assessment (HRA) (see Figure 3). Development which is likely to lead to an adverse effect on the integrity of the SPA will not be allowed.

Where new development is proposed within 400m of components of the Breckland SPA designated for Woodlark or Nightjar a project level Habitats Regulation Assessment (HRA) will be required (see Figure 3). Development which is likely to lead to an adverse effect on the integrity of the SPA will not be allowed.

New road infrastructure or road improvements will not be allowed within 200m of sites designated as SACs in order to protect the qualifying features of these sites (see Figure 3).

New development will also be restricted within 1,500m of any 1km grid squares which has supported 5 or more nesting attempts by stone curlew since 1995. Proposals for development within these areas will require a project level HRA (see Figure 3). Development which is likely to lead to an adverse effect on the integrity of the SPA will not be allowed.

Approach to HRA Screening of Forest Heath SIR

4.20 Prior to consideration of mitigation, the HRA Screening assumes that it is not possible to rule out likely significant effects on Breckland SPA if it appears unlikely that it would be possible to avoid development which:

- overlaps, or is within 1,500 m of, SSSI components of Breckland SPA designated for Stone Curlew; or
- overlaps, or is within 1,500 m of, Stone Curlew habitat areas functionally linked to Breckland SPA (1 km square with >=5 nesting attempts since 1995, as identified by research commissioned by FHDC); or
- overlaps, or is within 400 m of, SSSI components of Breckland SPA designated for Woodlark or Nightjar.

4.21 These three buffer areas for disturbance and other urban effects are shown in Figure 4.1 and are consistent with the 'constraint zones' identified in the adopted Core Strategy which have been agreed by Natural England.

4.22 It is noted that FHDC has commissioned a study to update the survey grid squares within which Stone Curlew nesting attempts have been recorded in the past 10 years. The results of the study were not available at the time of writing but should be used to inform HRA at the Proposed Submission stage of plan making.

4.23 Potential effects are generally more appropriately assessed via HRA of the site-specific allocations set out in the SALP. It is possible, however, that some strategic housing distributions specified by the SIR would be unlikely to be able to avoid development within the Breckland SPA buffer areas above, regardless of the specific sites allocated at each identified settlement. The HRA screening of the SIR housing distribution options therefore examines this possibility.

Existing mitigation which could rule out likely significant effects and avoid the need for Appropriate Assessment

4.24 Policy CS2 of the adopted Core Strategy requires project level HRA for development proposals within 'HRA Constraint Zones' that correspond with the HRA Screening criteria listed at paragraph 4.19. It further states that development likely to lead to an adverse effect on the integrity of the SPA will not be allowed.

Disturbance from construction or operation of roads

4.25 The development provided for by the SIR could result in the need for construction of new roads, improvements to existing roads or increased traffic and congestion on existing roads. This could, in turn, result in adverse effects on sensitive, designated species due to increases in noise and vibration, light pollution, or the visual presence of roads and traffic.

4.26 Potential effects of increased road traffic on air quality are dealt with in a separate section below.

4.27 The potential for direct damage from road construction is judged to be adequately considered elsewhere via HRA of the Suffolk Local Transport Plan (for major schemes); via HRA of the SALP in relation to direct loss or physical damage due to construction (for road development within allocated development site boundaries), or via project level HRA as required (for any other road development).

European sites potentially affected

4.28 The European sites potentially affected are:

- Breckland SPA.

4.29 Based on a review of the designated features of the scoped-in European sites, the documented pressures and threats facing them and the locations of these sites in relation to Forest Heath District, the potential for disturbance from construction or operation of roads only exists in relation to the designated bird species of Breckland SPA.

Relevant information

4.30 A clear avoidance by Stone Curlews of otherwise suitable habitat adjacent to major roads has been demonstrated in a number of studies (Day, 2003) (Green, et al., 2000) (Sharp, et al., 2008). These effects exist up to a distance of at least 1,000 m from trunk roads and possibly up to 2,000 m.

4.31 More recent work (Clarke & Liley, 2013) updates and expands this evidence. The new analysis of Stone Curlew data in and around Breckland SPA shows that, regardless of the amount of nearby buildings, the nest density was always lowest in the subset of areas within 0.5 km of the nearest trunk road (A11, A14 or A47) and highest in the areas furthest from the nearest trunk road. No consistent pattern was found for non-trunk roads. The overarching conclusion of the study authors is that their analysis provides strong support for the continuation in planning policy of a 1,500 m development constraint zone around areas capable of supporting Stone Curlew.

Approach to HRA Screening of Forest Heath SIR

4.32 Potential disturbance effects from construction or operation of roads are judged to be most appropriately assessed via HRA of the housing distribution options set out in the SIR since the need for and locations of significant additions to road network capacity will require consideration of the broad pattern of development across the District. The potential disturbance effects of new access roads serving individual developments are judged unlikely to be significant in isolation and are judged to be adequately considered by the wider assessment for 'disturbance and other urban edge effects' of the housing distribution options and site allocations, as described in the preceding section.

4.33 The SIR does not propose road infrastructure schemes; these would come forward under the Suffolk Local Transport Plan (LTP) which is subject to its own HRA. However, the scale and broad locations for housing provided by the SIR may increase the need for road infrastructure

development. The HRA therefore assumes that it is not possible to rule out likely significant effects on Breckland SPA if development provided for by the SIR would result in the need for any new road infrastructure or road improvements to increase capacity which:

- overlaps, or is within 1,500 m of, SSSI components of Breckland SPA designated for Stone Curlew; or
- overlaps, or is within 1,500 m of, Stone Curlew habitat areas functionally linked to Breckland SPA (1 km square with >=5 nesting attempts since 1995, as identified by research commissioned by FHDC);

4.34 FHDC has commissioned a Transport Study with a brief to identify traffic flow increases and the potential need for new road infrastructure or road improvements to increase capacity on any roads, including those outside the Forest Heath District boundary. Until this study reports it is unlikely to be possible to rule out likely significant effects from the SIR.

Existing mitigation which could rule out likely significant effects and avoid the need for Appropriate Assessment

4.35 No Core Strategy policies or other existing strategic mitigation are likely to alter the requirement for Appropriate Assessment of plan proposals for which likely significant effects are not ruled out.

Recreation pressure

4.36 Housing development could result in increased numbers of visitors to European sites within or close to the District. This could result in adverse effects on European sites with designated features that are sensitive to recreation pressure as follows:

- *Designated species mortality or disturbance:* direct mortality of ground nesting birds' eggs or young by visitor trampling or dogs off leads; disturbance of ground nesting birds by recreational visitors and their dogs; mortality due to increased incidence of fires; mortality due to tipping/littering.
- *Designated habitats loss or damage:* path erosion or soil compaction by walkers, cyclists, horse riders etc.; eutrophication of soils by dog faeces; increased incidence of fires; tipping/littering; illegal plant collection.

European sites potentially affected

4.37 Based on the relevant information reviewed below and correspondence with Natural England, the HRA assumes that no significant contribution to increased recreation pressure will occur more than 7.5 km from new housing development. The vulnerability to recreation pressure (based on designated features, current condition and pressures/threats) of European sites overlapping Forest Heath District or within 7.5 km of district boundary is as follows:

- Fenland SAC – no significant vulnerability to recreation pressure, based on designated features plus pressures and threats described in Site Improvement Plan.
- Wicken Fen Ramsar site – no significant vulnerability to recreation pressure, based on designated features plus pressures and threats described in Site Improvement Plan.
- Chippenham Fen Ramsar site – no significant vulnerability to recreation pressure, based on designated features plus pressures and threats described in Site Improvement Plan.
- Devil's Dyke SAC – no significant vulnerability to recreation pressure, based on designated features plus pressures and threats described in Site Improvement Plan.
- Rex Graham Reserve SAC – Whilst the related SSSI is in 100% favourable condition, the Site Improvement Plan notes that there is an ongoing threat to site features (military orchid) from illegal plant collection.
- Breckland SAC –Site Improvement Plan does not list any SAC designated features as currently being under pressure from public access / disturbance but identifies potential

future threat of increased recreation through eutrophication (dog fouling, unauthorised fires) and disturbance of soils.

- Breckland SPA - Site Improvement Plan states that designated populations of Nightjar and Woodlark could be threatened by future increases in recreational visitors. Whilst not highlighted in the Site Improvement Plan, the designated population of Stone Curlew is also likely to be vulnerable to public access / disturbance since it is a ground-nesting bird and Natural England has confirmed that Stone Curlew are thought to be disturbed by people walking at a distance of 500 m from a nest.

4.38 The HRA will therefore consider the potential for recreation pressure on Rex Graham Reserve SAC and Breckland SAC and SPA.

Relevant information

4.39 There is an extensive evidence base on the effects of recreational disturbance on Stone Curlews, Nightjars and Woodlarks, the three Annex I bird species of Breckland SPA. Although national populations of all three species have generally increased in recent years, prospects for further recovery, for Nightjar and Woodlark at least, may be limited by factors including the effects of recreational disturbance (Langston, et al., 2007).

4.40 A study of incubating Stone Curlews on Salisbury Plain (Taylor, et al., 2007) has shown that they leave the nest in response to disturbance at considerable distances (>300 m) and that the closer a potential source of disturbance, the greater likelihood that the birds would respond by leaving the nest. Birds were more likely to respond by running or flying from a walker with a dog than from a walker without a dog, or from a motor vehicle.

4.41 Studies of Nightjars have shown that breeding success is lower on sites with higher levels of access, and for nests close to footpaths. Recreational disturbance, particularly from dogs, causes adults to be flushed from the nest, potentially betraying the presence of the nest to predators such as crows (Langston, et al., 2007) (Langston, et al., 2007) (Murison, 2002) (Woodfield & Langston, 2004).

4.42 Woodlarks have been intensively studied in conifer plantations and heathland habitats in the Dorset Heaths (Mallord, 2005). This work has shown that otherwise suitable habitat with high levels of recreational access holds lower densities of Woodlarks. Whilst breeding success in such areas is actually better, due to reduced competition between Woodlarks (Mallord, et al., 2007) (Mallord, et al., 2006), this is not sufficient to compensate for the effect of disturbance and the net effect on the Woodlark population is negative (Mallord, et al., 2006).

4.43 Having established that the designated bird species of Breckland SPA are sensitive to recreational pressure, it is necessary to consider existing levels of recreation in the SPA and the extent to which these are likely to increase as a result of the development provided for by the SIR.

4.44 Detailed analysis of recreational pressure on Breckland SPA has been carried out to inform HRA work for the neighbouring Breckland Core Strategy (Liley, et al., 2008). Parallels can be drawn with statistical modelling of increases in visitor use of paths in the Breckland SPA as a result of different housing growth scenarios for the town of Thetford (Dolman, et al., 2008). The three housing growth scenarios examined provided for different distributions of housing to Thetford's existing urban area, an urban extension to its northern boundary, and an urban extension to the south east by 2021, but all three featured total housing growth of 7,743 dwellings during 2007-2031. The fact that more housing growth was proposed for Thetford than is now being proposed for the whole of Forest Heath District (the SIR preferred option provides for 6,800 homes during 2011-2031), let alone any individual settlement in the District, means that applying the results from the HRA of the Breckland Core Strategy to understand the potential scale and likely effects of increased recreation pressure around settlements on Forest Heath represents a suitable approach, consistent with the precautionary principle that is required under the Habitats Regulations.

4.45 The modelling of visitor growth around Thetford allowed the RSPB[8] to use their 'SCARE' model to explore the potential for increased flushing of Stone Curlews as a result of an increase in access

[8] Early draft report provided by R. Langston, RSPB, on 21/9/08

levels resulting from new housing. The model predicted visitor numbers associated with baseline and future housing numbers to paths in Breckland SPA. The resulting calculation of mean number of disturbance events per hour (averaged across all path sections within each 3 km grid square) increased from a baseline range of 0.04-1.10 with current housing levels to a range of 0.06-1.80, as an average for all future housing scenarios. Although this analysis was based on proposed levels of housing growth in and around Thetford, the results are also relevant to housing growth around settlements in Forest Heath District, given the close geographical location of the two areas to each other and to Breckland SPA.

4.46 As a means of determining the likely scale of recreation pressure on the other two Annex I species of Breckland SPA (Woodlark and Nightjar), the HRA of the Breckland Core Strategy (Liley, et al., 2008) also analysed how visitor levels in Breckland SPA compare to two other SPAs which support Woodlark and Nightjar, namely Dorset Heaths SPA and Thames Basin Heaths SPA. This comparison is useful because the effects of recreation pressure and associated mitigation have been widely examined at these two SPAs. The comparison established that Breckland SPA represents a much larger parcel of land with public access and has far fewer houses nearby (within 500m or within 5 km) compared to Dorset Heaths SPA and Thames Basin Heaths SPA. Directly comparable visitor data were unavailable for the three European sites but very broad brush estimates suggest that visitor pressure on Breckland SPA is low relative to the other two SPAs. This is presumably because the density of population within the vicinity of both the Dorset Heaths SPA and Thames Basin Heaths SPA is much greater than for Breckland SPA. The HRA of the Breckland Core Strategy concluded that the modelled increases in visitors as a result of planned new housing in Breckland District would still not result in the same general level of recreation pressure on Breckland SPA as is currently experienced on the Dorset Heaths SPA and Thames Basin Heaths SPA.

4.47 The HRA also needs to consider the distance over which increases in recreational pressure associated with new housing may be significant. Work in other parts of the country (Liley, et al., 2008), (Sharp, et al., 2008) has shown that coastal sites or large tracts of semi-natural habitat will attract a relatively high proportion of residents from up to 20 km away from the site. Patterns of recreational use of the Thetford Forest area of Breckland SPA established through visitor surveys (Dolman, et al., 2008) show that whilst many visitors are relatively local (43% had travelled less than 5 km from their home postcode to the interview location within the Forest), 37% had travelled more than 10 km from home. Almost all of Forest Heath District lies within 10 km of the Breckland SPA, as do all of its major settlements.

4.48 A more recent visitor study for Breckland SPA (Fearnley, et al., 2010) concentrates on heathland and forest ('Thetford Forest') areas of the SPA rather than farmland on the basis that these areas attract more visitors, and from further afield, since access to arable farmland is available close to home for many of the District's residents. It notes the precautionary approach taken by the HRA of the Breckland Core Strategy to potential recreational disturbance due to a lack of firm evidence to determine whether the Annex I birds of Breckland SPA are being adversely affected by recreational disturbance. Based on the new visitor survey work carried out, the study goes on to advise a continued need for a precautionary approach when considering the future growth proposals for both St Edmundsbury Borough and Forest Heath District.

4.49 A key finding of the research is that the majority of visitors are local residents (87%), living within a 10 km radius and using Thetford Forest as their local green space which they visit at least weekly. The research recommends that:

> *"Any new housing within this radius should be identified as development that would be likely to have a significant effect as a result of recreational disturbance upon the SPA, in the absence of any counteracting measures and taking a precautionary approach. It is also likely that, the closer new housing is to the Forest, the greater the additional recreational pressure will be."*

4.50 The research notes that its findings on the relationship between visitor rates and distance from home are similar to those obtained during earlier HRA (Breckland District Council, 2010) from a different data set. The earlier study showed that visitor rates flatten out at about 7.5 km from home to the edge of Thetford Forest; the more recent visitor study (Fearnley, et al., 2010) measured distances from home postcodes to survey locations within the SPA. On this basis,

Natural England has confirmed that it agrees that new development is unlikely to contribute significantly to recreational pressure on Breckland SPA where development is located more than 7.5 km from the SPA boundary (Natural England, 2016).

4.51 As noted in the preceding section, there is an ongoing recreational threat to Rex Graham Reserve SAC from illegal collection of the military orchid population that is the reason for the site's designation.

Approach to HRA Screening of Forest Heath SIR

4.52 The Forest Heath Core Strategy provides for 6,400 dwellings during 2001-2021 plus a further 3,700 during 2021-2031. The HRA of the Core Strategy concluded that the scale and broad location of housing growth proposed () would increase visitor numbers to Breckland SPA, in-combination with housing growth in neighbouring Breckland District. Based on the results of the modelling described above and the fact that the scale of housing growth at each of Forest Heath's settlements would be less than was planned for Thetford (7,743 dwellings during 2007-2031), the Forest Heath Core Strategy HRA concluded that the increase in recreational pressure would be small and unlikely to reach the same levels experienced by broadly comparable SPAs (Thames Basin Heaths and Dorset Heaths). This analysis remains valid for the broadly similar scale of growth now proposed by the SIR Preferred Options document (6,800 dwellings during 2011-2031). Further comfort can be taken from the fact that whilst many of the Breckland grass heaths have 'open access land' designated under the Countryside and Rights of Way Act 2000 (CRoW), restrictions are put in place each year due to the presence of Stone Curlews which will minimise disturbance effects on those sites.

4.53 However, the visitor modelling described above provides evidence that some areas of habitat would be less likely to be used by Stone Curlews as a result of recreational disturbance linked to new housing development. Also, uncertainty is created by the fact that bird distributions change over time, particularly those of Nightjar and Woodlark in relation to forestry management. Thus, whilst the increase in recreation associated with the Core Strategy SIR and the SALP is likely to be low, likely significant effects on Breckland SPA in relation to its Annex I birds cannot be ruled out on a precautionary basis.

4.54 Given the general agreement of the two Breckland SPA visitor studies discussed above, the HRA Screening of the SIR and Site Allocations Local Plan assumes that the potential for likely significant effects cannot be ruled out from housing development within 7.5 km from the development location to the edge of Breckland SAC and Breckland SPA. Development more than 7.5 km from Breckland SPA is assumed to have no effect.

4.55 Figure 4.2 shows that Breckland SAC and Breckland SPA are large European sites which span a number of neighbouring districts and a 7.5 km buffer around these designations takes in a number of local population centres including Thetford in Breckland District and Bury St Edmunds in St Edmundsbury Borough. The review of the Core Strategies and corresponding HRAs for these two districts (Appendix 1) confirms that the development proposed has the potential to contribute to increased recreation pressure on Breckland SAC/SPA although mitigation has been put in place to avoid likely significant effects on European sites from the development plans for those districts.

4.56 Given the absence of visitor survey data specific to Rex Graham Reserve SAC, the same 7.5 km distance assumption is made for that European site on a precautionary basis although the small size of the site relative to nearby areas of accessible natural greenspace, including Breckland SAC/SPA, may mean that it has a smaller recreation catchment.

4.57 In relation to potential recreational disturbance of the designated Stone Curlew population of Breckland SPA, the zone within which the potential for likely significant effects is identified has not been extended to areas which are more than 7.5 km from the Breckland SPA boundary but are within this distance of identified Stone Curlew nesting attempts areas. This approach has been agreed with Natural England (Natural England, 2016), based on the distances from visitors at which Stone Curlew suffer an effect and the fact that any potential recreational effects caused by development proposals within the Stone Curlew nesting attempts areas would be picked up at the planning application stage due to the requirements of Core Strategy Policy CS2.

4.58 In summary, prior to consideration of mitigation, the HRA Screening assumes that it is not possible to rule out likely significant effects for any site allocation with a housing component:

- within 7.5 km of the boundary of Breckland SPA (potential for species mortality or disturbance); or
- within 7.5 km of the boundary of Breckland SAC or Rex Graham Reserve SAC (potential for loss of or damage to designated habitats).

4.59 The 7.5 km recreation buffers around Breckland SAC, Breckland SPA and Rex Graham Reserve SAC are shown in Figure 4.2.

4.60 Allocations with no housing component were assumed to not give rise to recreation pressure.

4.61 Given the spatial nature of the HRA screening criteria, potential effects were primarily assessed via HRA of the housing distribution options, as set out in Chapter 6, and screening of site allocation options, as set out in a separate HRA report accompanying the SALP. However, given the broad extent of these screening buffers, it was also necessary to assess whether the total housing provision provided by the SIR could feasibly be delivered without a likely significant effect.

Existing mitigation which could rule out likely significant effects and avoid the need for Appropriate Assessment

4.62 Relevant existing policies include:

- Core Strategy Policy CS2: promotion of green infrastructure on all new developments.
- Core Strategy Policy CS13: requirement for sufficient capacity in existing local infrastructure (including for open space, sport and recreation) before land is released for development; developer contributions to improve infrastructure to the required standard. Guidance on how the Council will implement the open space requirements within this policy is provided in an SPD (Forest Heath District Council, 2011) which includes the approach to determining when developer contributions can be used to provide off site open space.
- Development Management Policy DM12 (Forest Heath District and St Edmundsbury Borough Councils, 2015):

  > *"All new development (excluding minor household applications) shown to contribute to recreational disturbance and visitor pressure within the Breckland SPA and SAC will be required to make appropriate contributions through S106 agreements towards management projects and/or monitoring of visitor pressure and urban effects on key biodiversity sites."*

- Development Management Policy DM42: requirement for developers to make proposals acceptable in relation to open space provision and maintenance.
- Development Management Policy DM44: protects against the loss of existing or proposed rights of way and enables improvements to rights of way to be sought.

4.63 The effects of emerging policy requirements for open space provision and enhancement alongside new development in the SALP Preferred Options document plus evidence from FHDC's emerging Recreation Mitigation Strategy which will outline the amount and type of open space to be provided and how this addresses recreational needs are examined through the HRA Screening in the remainder of this report.

Water quantity

4.64 Water abstraction to supply new development provided for by the SIR could result in changes to water levels or flows at hydrologically connected European sites with the potential for adverse effects on designated features sensitive to such changes.

European sites potentially affected

4.65 The potentially affected European sites would depend on the particular additional water resource schemes, if any, required to serve the growth proposed by the SIR and cannot be identified until the Council's updated Water Cycle Study reports.

Relevant information

4.66 Water companies have a statutory duty to establish how planned development in their area can be serviced. These plans are set out in their Water Resources Management Plan (WRMP). Investments to deliver the plans are based on five year planning cycles known as Asset Management Periods (AMP) so the water company programme for water infrastructure upgrades may constrain the rate at which residential growth can be supported. Through its abstraction licensing regime, the Environment Agency monitors the state of the environment and existing abstractions and uses this information to determine how much water is permitted to be abstracted from rivers, groundwater and other sources. This process has led the Environment Agency to reduce licensed abstraction to more sustainable amounts in the former Cambridgeshire and West Suffolk Resource Zone 09 (RZ09), into which Forest Heath District fell at the time of the HRA of the Core Strategy. This and the relatively poor connectivity in the area has led to RZ09 being disaggregated into five smaller RZs, with Forest Heath District falling within three: Ely, Newmarket and West Suffolk Resource Zones (Anglian Water Services, 2015).

4.67 The draft Water Resource Management Plan (Anglian Water Services, 2008) at the time of the Appropriate Assessment of the Core Strategy showed that Forest Heath was in a water deficit area. The SFRA/Water Cycle Study (Hyder Consulting, 2009) identified that Forest Heath and St Edmundsbury Districts are part of Anglian Water's 'Bury' supply area and that a number of major water resource issues existed for this supply area. A number of supply network improvements were planned in WRZ09 to help address these.

4.68 The SFRA/Water Cycle Study (Hyder Consulting, 2009) concluded that once the supply improvement schemes for AMP4, together with further measures, such as leakage reduction and water efficiency strategies, were implemented in the AMP5 period (2010-2015), then there would be sufficient water resources to accommodate the growth provided for by the Core Strategy without increased abstraction having negative effects on any European sites. Although this could not be confirmed with certainty until Stage 2 of the SFRA/Water Cycle Study was complete, the Appropriate Assessment of the Core Strategy placed reliance on the continued ability of the Environment Agency's abstraction licensing system to protect European sites from the potential negative effects of over-abstraction.

4.69 A Stage 2 Water Cycle Study carried out in 2011 (Hyder Consulting, 2011) stated that total potable water demand from businesses in the District was not expected to increase in the foreseeable future because the effects of employment growth are expected to be offset by replacement of industries that have high water demand with service industry. It then examined six scenarios for residential water demand, each based on the scale of growth set out in the Core Strategy but different assumptions about demand reduction. The scenario based on the water efficiency requirements for new homes in Policy CS4 (achieving Code for Sustainable Homes Level 3 target of 105 litres/person/day) and no future efficiency savings in existing homes (Scenario D3) forecasts total additional water demand in the District of 24% by 2031 against a 2010 baseline. The study concluded that the long term AWS plan for water resources in the study area (including local demand management, and resource development in the wider area) would allow the provision of adequate potable water for the proposed growth, and the existing population, whilst allowing sufficient resilience against climatic change risks.

4.70 In 2015, AWS published its latest WRMP for the period 2015-2040. Table 4.2 summarises for each of Ely, Newmarket and West Suffolk Resource Zones the scale of residential growth assumed by the WRMP, the forecast year by which it is forecast that demand will exceed supply in the absence of future supply and demand management measures, the preferred supply and demand management measures proposed to bring supply and demand back into balance. It is notable that the WRMP deliberately makes its own assumptions on housing growth rather than using local authority policy figures. The forecasting also assumes that demand management (various leakage reduction, enhanced metering and water efficiency measures) will be implemented in each Resource Zone.

Table 4.2 Forecast supply-demand status for Water Resource Zones covering Forest Heath District (Anglian Water Services, 2015)

Resource Zone (RZ)	Assumed dwellings growth per annum in RZ 2015-2040	Year by which RZ enters deficit	Preferred schemes to maintain supply-demand balance	European sites with likely significant effects
Ely	500	2024/25	E2 - Newmarket RZ transfer via new 10 km pipeline	None
Newmarket	250	N/A – remains in surplus	NWM2 - West Suffolk RZ transfer	None
West Suffolk	500 (2015-2020) 600 (2020-2025) 700 (2025-2040)	2024/25	WS5 - River Lark flow augmentation; WS2b - East Suffolk transfer	None

4.71 The final column of Table 4.2 draws on the results of the HRA Screening of the WRMP (Mott MacDonald, 2013). This examined the scheme options for maintaining supply-demand balance in each relevant Resource Zone and confirmed that likely significant effects could be ruled out for all preferred schemes. None of the reasons for screening out likely significant effects appear to be dependent on a particular scale of water demand/abstraction suggesting that the HRA conclusions for these schemes do not need to be revisited in light of changes in water demand associated with different levels of dwellings growth. However, it is possible that additional schemes might be required to maintain supply-demand balance at higher levels of dwellings growth than assumed by the WRMP. Note that demand management measures (leakage reduction, enhanced metering and water efficiency measures) are not required to undergo HRA due to their nature.

Approach to HRA Screening of Forest Heath SIR

4.72 The potential effects of development proposed by the SIR and SALP on water levels and flows will primarily be a function of the cumulative impact of all the proposed growth in the relevant catchments on water resources. Potential effects are therefore more appropriately assessed via HRA of the amount and broad distribution of housing growth set out in the Core Strategy SIR housing distribution options. The Council has commissioned an updated Water Cycle Study to inform the SIR and SALP and the HRA of these documents but the results of this study were not available at the time of writing. Should the Water Cycle Study reveal any site-specific issues, these will be dealt with in the HRA during the preparation of the Proposed Submission SALP (Regulation 19 consultation stage).

4.73 The Environment Agency's ongoing abstraction licensing regime will ensure that the scale of water abstraction from existing water resources will not result in likely significant effects on any European site. In relation to future schemes for maintaining the supply-demand balance of water, the HRA of the AWS WRMP 2015-2040 has demonstrated that none of the preferred schemes in any Resource Zones overlapping Forest Heath District will result in likely significant effects on a European site. It is not possible to directly compare the amounts of residential growth assumed by the WRMP to those now proposed by the SIR since the Resource Zones span multiple local authority areas and do not follow their boundaries.

4.74 LUC recommended that this piece of work seeks confirmation from AWS that the amount of residential growth proposed by the SIR is consistent with the planning assumptions of the WRMP 2015 such that no schemes additional to those preferred by the WRMP 2015-2040 are required to maintain supply-demand balance. Until such confirmation is obtained the HRA Screening of the SIR is unlikely to be able to rule out likely significant effects on European sites.

Existing mitigation which could rule out likely significant effects and avoid the need for Appropriate Assessment

4.75 Development Management Policy DM7: Sustainable Design and Construction sets water efficiency standards for all residential development and non-residential developments over 1,000 square metres in area.

Water quality

4.76 New development could result in increased volumes of treated wastewater discharges, resulting in nutrient enrichment of water and potential lowering of dissolved oxygen as well as increased water velocities and levels downstream of Water Recycling Centres (WRC) outfalls.

4.77 New development could also result in overloading of the combined sewer network during storm events with the potential for contamination of hydrologically connected European sites.

4.78 An increase in the area of urban surfaces and roads could increase the potential for contaminated surface runoff and the contamination of hydrologically connected European sites.

European sites potentially affected

4.79 The potentially affected European sites are those which are downstream of the main development locations and which have designated features that are sensitive to changes in water quality. Based on a review of the designated features of the scoped-in European sites, the documented pressures and threats facing them and the locations of these sites in relation to Forest Heath District, the European sites judged to have the potential to be affected by development resulting in reduced water quality are as follows:

- Breckland SAC.
- Fenland SAC, Chippenham Fen Ramsar site, Wicken Fen Ramsar site.
- Ouse Washes SAC, SPA and Ramsar site.
- The Wash and North Norfolk Coast SAC and The Wash SPA and Ramsar site.

Relevant information

4.80 Table 4.3, reproduced from the Appropriate Assessment of the Core Strategy (Forest Heath District Council, 2009), summarises the WwTWs serving the District, the areas served, the receiving water courses and the downstream European sites. Each of these European sites has some designated features with the potential to be adversely affected by increased wastewater discharges.

Table 4.3 WwTWs serving Forest Heath District, their discharge locations and downstream European sites

WwTW (area served)	Receiving water course	European sites potentially affected
Brandon (Brandon)	Little Ouse	Ouse Washes SAC / SPA/Ramsar site, The Wash SPA/Ramsar site, The Wash and North Norfolk Coast SAC, Breckland SAC (Weeting Heath component SSSI)
Lakenheath (Lakenheath)	Twelve Foot Drain (via Crooked Dyke)	Ouse Washes SAC/SPA/Ramsar site, The Wash SPA/Ramsar site, The Wash and North Norfolk Coast SAC
Mildenhall (Mildenhall, Beck Row and West Row)	River Lark	Ouse Washes SAC/SPA/Ramsar site, The Wash SPA/Ramsar site, The Wash and North Norfolk Coast SAC
Newmarket (Newmarket, Kentford and Exning)	River Snail	Ouse Washes SAC/SPA/Ramsar site, The Wash SPA/Ramsar site, The Wash and North Norfolk Coast SAC, Fenland SAC, Chippenham Fen Ramsar site, Wicken Fen Ramsar site
Tuddenham (Tuddenham, Red Lodge and Herringswell)	Tuddenham Mill Stream	Ouse Washes SAC/SPA/Ramsar site, The Wash SPA/Ramsar site, The Wash and North Norfolk Coast SAC

4.81 A Stage 1 SFRA/Water Cycle Study (Hyder Consulting, 2009) that informed the Appropriate Assessment of the Core Strategy concluded that the Lakenheath WwTW and the Tuddenham WwTW had limited capacity to accommodate new development. In order to accommodate the

growth proposed in the Core Strategy, Lakenheath WwTW would need to be upgraded before it reached its dry weather flow (DWF) consent between 2010 and 2015, and the Tuddenham WwTW would need to be upgraded prior to reaching its DWF in the period 2025 to 2031.

4.82 Brandon WwTW would reach its DWF consented capacity around 2031 and so might require upgrading prior to this. It would also require upgrading in terms of phosphorus removal during the Plan period as failure to do this would probably result in the river Little Ouse failing Water Framework Directive (WFD) "good" status for phosphorus levels.

4.83 WwTWs at Mildenhall and Newmarket had enough consented headroom to accommodate the growth proposed in the Core Strategy and it may have been possible for the Mildenhall WwTW to accept some of the demand created by new development at Red Lodge.

4.84 There were also concerns that the water quality of the receiving watercourses would not reach WFD "good" status, particularly for phosphate levels, and it was considered likely that discharges from the District's WwTWs were contributing to this, together with other sources. The Appropriate Assessment of the Core Strategy also noted that discharges upstream and outside of Forest Heath were having some effect on the quality of the water in the watercourses in the District. This was particularly true of the water in the River Lark, which receives discharges from Fornham All Saints and Barrow WwTWs which serve Bury St Edmunds and the surrounding villages.

4.85 More recently, a Stage 2 Water Cycle Study (Hyder Consulting, 2011) considered the capacity of the District's WwTWs and water environment to accommodate the increased wastewater from the development proposed at that time (as per the scale, locations and timing of development set out in Policy CS7 plus development already committed). Consistent with the Stage 1 study, the need for increased treatment capacity, an upgraded standard of treatment or an increase to the consented volume of treated discharges was identified for three of the WwTWs serving the District - Brandon, Lakenheath and Tuddenham. In all cases, it was judged that the required upgrades could be achieved with no deterioration in the quality of the receiving waters provided that there was no acceleration of the timings of growth set out in Core Strategy Policy CS7. Whilst Lakenheath and Red Lodge remained areas of concern; it was concluded that the Forest Heath Core Strategy policy to postpone additional development here should allow the stakeholders to design and implement the required infrastructure improvements.

4.86 A follow-up study into the wastewater treatment and sewerage network capacity constraints at Red Lodge, as identified by the Stage 2 Water Cycle Study, was published in October 2014 (Hyder Consulting, 2014). This recognised wastewater treatment capacity improvements at Tuddenham WwTW undertaken by AWS since the publication of the Stage 2 Water Cycle Study. In light of these upgrades and based on a growth trajectory of 937 homes during 2013-2021 and 640 homes during 2021-2031 (totalling 1,577 homes during 2013-2031) it was concluded that this trajectory of growth could be accommodated up to approximately 2021 at which point additional modifications/extensions will be required. It further concluded that AWS should readily be able to deliver such improvements at that time and that discharges should remain within the existing consent for Tuddenham WwTW up until approximately 2029/30.

4.87 In May 2015 correspondence with the Council, AWS provided further information on waste water treatment capacity, as summarised in Table 4.4.

Table 4.4 Potential waste water treatment capacity issues identified by AWS in May 2015 correspondence to FHDC

WwTW (area served)	AWS comments on scale of growth and potential impact on infrastructure
Brandon (Brandon)	Currently spare capacity to accommodate growth up to 500-1,000 homes; the largest scale of growth (1,000-2,500) may require upgrades. Any required upgrades will be funded by Anglian Water however they will need to be planned and funded through our 5 year business plan, approved by our economic regulator Ofwat. We can look at this in more detail when potential sites have been identified to assess the impact of potential growth.
Lakenheath (Lakenheath)	Currently spare capacity to accommodate growth up to 500-1,000 homes; the largest scale of growth (1,000-2,500) may require upgrades. Any required upgrades will be funded by Anglian Water however they will need to be planned and funded through our 5 year business plan, approved by our economic regulator Ofwat. We can look at

WwTW (area served)	AWS comments on scale of growth and potential impact on infrastructure
	this in more detail when potential sites have been identified to assess the impact of potential growth.
Mildenhall (Mildenhall, Beck Row and West Row)	Currently capacity to accommodate all levels of growth indicated (i.e. up to 1000-2,500 homes at each settlement) at any one of the three settlements served by this WwTW, although maximum growth at all three settlements might require upgrades.
Newmarket (Newmarket, Kentford and Exning)	Currently capacity to accommodate all levels of growth indicated (i.e. up to 1,000-2,500 homes in total across these three settlements).
Tuddenham (Tuddenham, Red Lodge and Herringswell)	Currently spare capacity to accommodate growth up to 500-1,000 homes at Red Lodge; the largest scale of growth (1,000-2,500) may require upgrades. AWS were not asked about growth at Tuddenham and Herringswell although the stated capacity can be taken to be an aggregate for all settlements within the WwTW catchment.

Approach to HRA Screening of Forest Heath SIR

4.88 Potential effects of development on water quality are judged to be most appropriately assessed via HRA Screening of the housing distribution options rather than the total housing provision or individual allocations in the SALP. This allows consideration of the catchment within which development will take place and also the total amount of development to be provided within each of those catchments.

Treated wastewater discharges

4.89 All of the receiving water courses from the District's WwTWs are hydrologically connected to European sites (as shown in Table 4.3) and all of these sites are sensitive to changes in water quality. It is not possible to determine from the 2011 Stage 2 Water Cycle Study how much additional housing growth over that proposed by the Core Strategy could be accommodated at the District's WwTWs and this evidence is now dated. Whilst May 2015 correspondence between AWS and the Council provides an update on spare capacity (as summarised in Table 4.4) this correspondence is now almost a year old and it also refers to the need to look in more detail when potential sites have been identified. The Council has commissioned an update to the Water Cycle Study which should provide sufficient evidence to conclude whether the development proposed is likely to affect water quality at hydrologically connected European sites due to increased volumes of treated wastewater discharged from WwTWs serving the district.

4.90 Prior to the updated Water Cycle Study becoming available, sufficient uncertainty exists that it is unlikely to be possible to rule out likely significant effects, on a precautionary basis. Once the updated Water Cycle Study becomes available and assuming that no technically insurmountable issues are identified then HRA Screening should be able to rule out likely significant effects by reliance on existing mitigation as follows:

- Core Strategy Policy CS13: requirement for sufficient capacity in existing local infrastructure before land is released for development and to gather developer contributions to improve infrastructure to the required standard. One of the main areas to be addressed is:

  "Providing for additional strategic waste water treatment capacity in accordance with Strategic Flood Risk Assessment and Water Cycle Study. This waste water infrastructure will be upgraded as required and operational in time to meet the demands of the development;"

- Development Management Policy DM14: all development proposals should ensure no deterioration to water quality and development will not be permitted where, individually or cumulatively, there are likely to be unacceptable impacts on the natural environment or surface and groundwater quality.

- The Environmental permitting regime operated by the Environment Agency should ensure that any development requiring variation in the discharges from a WwTW does not result in deterioration in downstream water quality.

Combined sewer overflows

4.91 It is not possible to determine from the 2011 Stage 2 Water Cycle Study how much additional housing growth over that proposed by the Core Strategy could be accommodated by the District's sewerage network. The HRA Screening has assumed that it is not possible to rule out likely significant effects on the European sites listed at 4.79 above until the forthcoming updated Water Cycle Study confirms that any sewer network capacity issues can feasibly be addressed.

4.92 As for treated wastewater discharges, sufficient uncertainty exists that it is unlikely to be possible to rule out likely significant effects, on a precautionary basis. Once the updated Water Cycle Study becomes available and assuming that no technically insurmountable issues are identified then HRA Screening should be able to rule out likely significant effects by reliance on existing mitigation from Core Strategy Policy CS13 and Development Management Policy DM14, as outlined above.

Contaminated surface runoff

4.93 Whilst there is the potential for contaminated surface runoff to adversely affect the European sites listed at 4.79 above, the HRA screening is likely to be able to rule out significant effects by reliance on the following existing mitigation:

- Development Management Policy DM6: requirement for all new development to manage on-site drainage, for example by use of Sustainable Drainage Systems (SUDS).
- Development Management Policy DM14: all development proposals should ensure no deterioration to water quality and development will not be permitted where, individually or cumulatively, there are likely to be unacceptable impacts on the natural environment or surface and groundwater quality.

Air quality

4.94 Air pollution arising from new or more congested roads as a result of new development could result in toxic contamination or nutrient enrichment of sensitive habitats.

European sites potentially affected

4.95 Based on a review of the designated features of the scoped-in European sites and the documented pressures and threats facing them the potentially affected European sites are:

- Breckland SAC and SPA.
- Devil's Dyke SAC.
- Fenland SAC, Chippenham Fen Ramsar site, and Wicken Fen Ramsar site.
- Norfolk Valley Fens SAC.
- Rex Graham Reserve SAC.

Relevant information

4.96 The Design Manual for Roads and Bridges (Department for Transport, 2007) provides scoping criteria for the assessment of local air quality effects of development projects likely to affect road traffic and states that only designated sites within 200 m of roads affected by the project need be considered. Drawing on the Design Manual for Roads and Bridges criteria, a transport study commissioned by the Council is expected to identify road corridors (including those outside of Forest Heath District boundary) within 200 m of the above European sites where the scale and distribution of development proposed by the Core Strategy SIR means it is likely that:

- daily traffic flows will change by 1,000 AADT or more; or
- Heavy Duty Vehicle (HDV) flows will change by 200 AADT or more; or
- daily average speed will change by 10 km/hr or more; or
- peak hour speed will change by 20 km/hr or more.

4.97 In addition, areas within the 200 m buffer around these European sites likely to experience higher-than-average pollution concentrations, such as tunnel portals, roundabouts and junctions, should be identified.

4.98 Based on these criteria, the Council's forthcoming transport study is expected to identify road corridors (including those outside of Forest Heath District boundary) within 200 m of the sensitive European sites where the proposed scale and distribution of development proposed means that there is the potential for significant local air pollution.

Approach to HRA Screening of Forest Heath SIR

4.99 The HRA Screening assumed that likely significant effects could not be ruled out for any European sites from 4.96 above that intersect an area where there are likely to be significant local air pollution impacts, as defined by the Design Manual for Roads and Bridges scoping criteria.

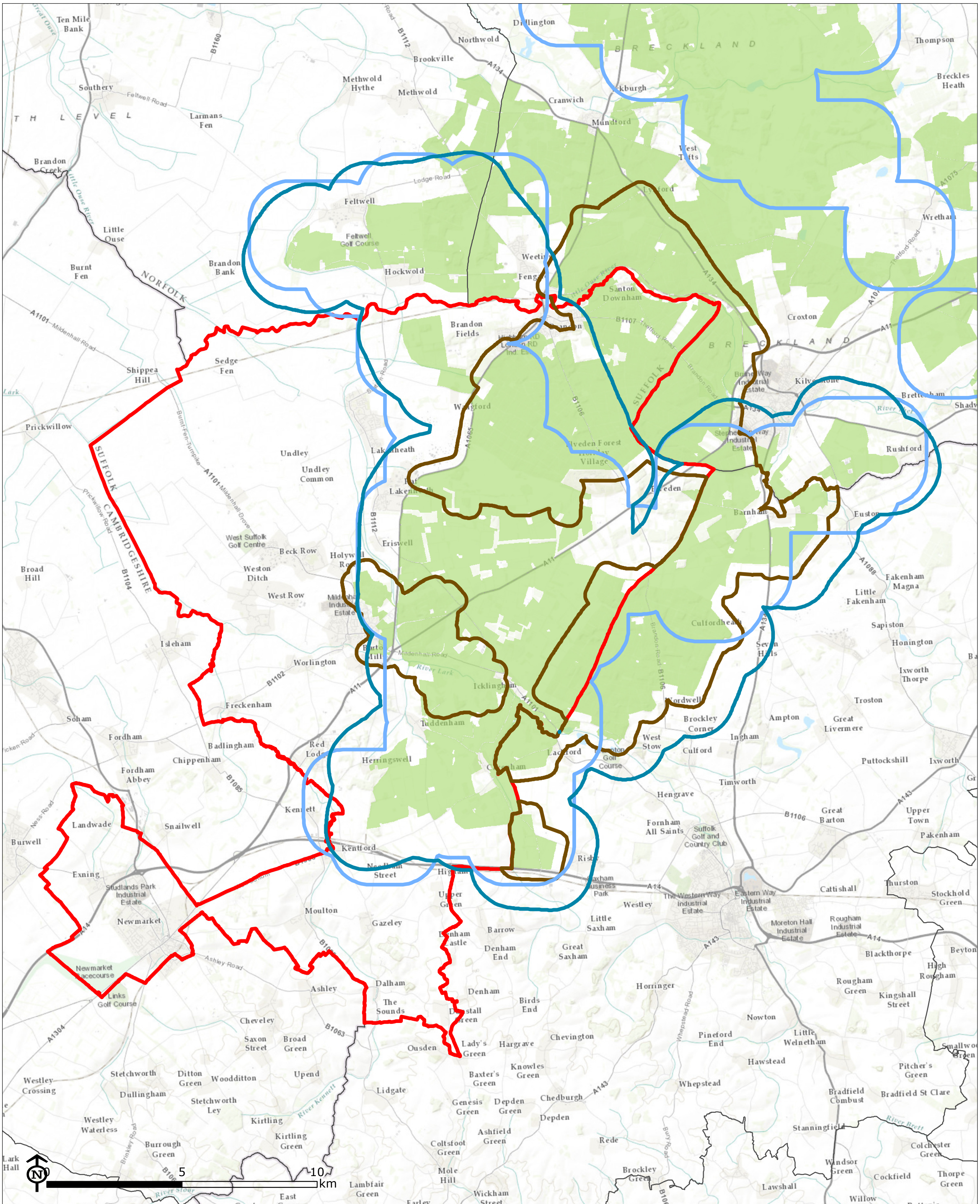
4.100 Potential effects are judged to be most appropriately assessed via HRA of the housing distribution options set out in the SIR since traffic modelling will require consideration of the broad pattern of development across the District rather than the effects of any single allocation. Should the forthcoming Transport Study reveal any site-specific issues, these will be dealt with in the HRA of the Proposed Submission SALP (Regulation 19 consultation stage).

Existing mitigation which could rule out likely significant effects and avoid the need for Appropriate Assessment

4.101 Core Strategy policy CS2 prevents the development of new road infrastructure or road improvements within 200 m of SACs. Whilst this should allow likely significant effects from road traffic pollution to be ruled out in relation to new or improved roads, the potential remains for effects from significant traffic increases on existing roads. Existing mitigation is therefore unlikely to alter the requirement for Appropriate Assessment if the transport study is unable to rule out likely significant effects.

4.102 Core Strategy Policy CS12 supports delivery of strategic sustainable transport proposals, specifically improvements to National Cycle Network Route 51 and to rights of way in the District.

4.103 Development Management Policy DM22 requires residential development proposals to ensure appropriate levels of permeability and accessibility, favouring sustainable transport routes and considering the needs of pedestrians and cyclists before car users.



1,500 m buffer around SSSI components of Breckland SPA designated for Stone Curlew

1,500 m buffer around, Stone Curlew habitat areas functionally linked to Breckland SPA (1 km square with >=5 nesting attempts 1995-2006)

400 m buffer around SSSI components of Breckland SPA designated for Woodlark or Nightjar

Breckland SPA

Forest Heath District Boundary

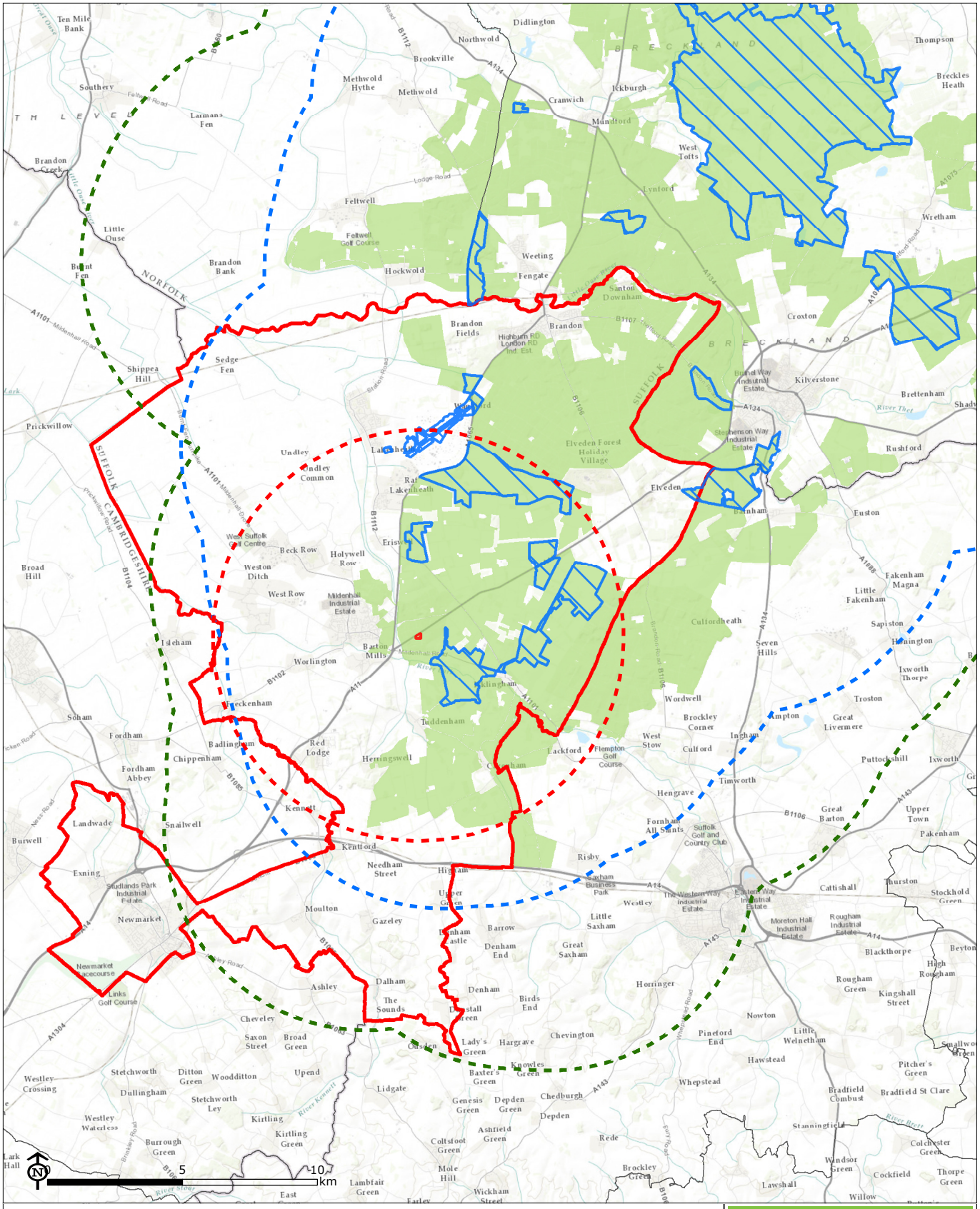
Map Scale @ A4: 1:200,000

Forest Heath Local Plan HRA

Figure 4.1 Disturbance and Other Urban Edge Effects Buffers

Source: JNCC. Natural England

LUC



Forest Heath Local Plan HRA

Figure 4.2 Recreation Pressure Buffers

Source: JNCC. Natural England

LUC

Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

CB:Green_C EB:Green_C LUCGLA 6446-01_005_Fig4-2_Recreation_Buffers 21/03/2016

5 HRA Screening of total housing provision

The total housing provision

5.1 Provision will be made for 6,800 dwellings in the district over the plan period 2011 to 2031 (equates to 340 dwellings per annum or 'dpa').

HRA Screening assessment

5.2 An assessment was carried out to identify the potential for the Core Strategy SIR preferred total housing provision to have likely significant effects on any of the European sites scoped into the HRA.

5.3 As explained in Chapter 4, certain types of potential effects from development on European sites are more appropriately assessed via the HRA Screening of housing distribution options (see Chapter 6) or via the HRA Screening of the Site Allocations Local Plan (contained in a separate report). The HRA Screening of the total housing provision is therefore concerned with the following types of potential effect:

- Recreation pressure.

5.4 The SIR total housing provision is a strategic policy which makes no reference to the locations for development. Since the policy will be implemented through a housing distribution policy (options for which are contained later in the SIR) and the Site Allocations Local Plan (being prepared concurrently with the SIR), the policy's effects on European sites are, in general, more appropriately assessed via HRA of the related, more spatially specific options. Assessment of the housing distribution options is provided in Chapter 6; assessment of the preferred Site Allocations is provided in a separate HRA Screening Report for the Site Allocations Local Plan. In taking this approach, however, it was necessary to check that the total amount of development proposed is not so great that, no matter where it is located, it could not be delivered without a likely significant effect on a European site, as follows.

5.5 The preferred total dwelling provision in the SIR was compared to the total provision under Policy CS7 of the adopted Core Strategy. Policy CS7 provides for 6,400 dwellings during 2001-2021 of which 1,935 were already built during 2001-2009, leaving 4,465 to be built during the 12 years from 2009 to 2021 (equating to 372 dpa) and 3,700 dwellings during the ten years from 2021 to 2031 (370 dpa). Following the addition of various measures for avoidance and mitigation in the Core Strategy, the Appropriate Assessment stage of the HRA was able to conclude that the Core Strategy would not have any adverse effects on the integrity of any European site.

5.6 Since the protective policies within the Core Strategy remain in force and the SIR Preferred Option provides for less housing during 2011-2031 than the Core Strategy, it is probable that adverse effects on the integrity of European sites will not arise. However, in light of the time that has elapsed since the Core Strategy was subject to HRA and following the precautionary principle, Table 5.1 considers whether likely significant effects may occur from the SIR total housing provision no matter where the development is located. The approach is based on the information and assumptions set out in Chapter 4.

Table 5.1 HRA Screening of options for total housing provision

Can likely significant effects be ruled out, prior to consideration of mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	HRA screening conclusion after existing mitigation	Recommendations
Recreation pressure			
No – unable to rule out likely significant effects on Breckland SAC and Breckland SPA, prior to mitigation. The potential for recreational disturbance to Annex I birds of Breckland SPA exists from any housing development within 7.5 km of its boundary. As shown in Figure 4.2, 7.5 km buffers around Breckland SAC and Breckland SPA cover most of Forest Heath District and it is judged unlikely that any reasonable alternative distribution of 6,800 homes would be able to avoid these buffer areas entirely. The greater extent of the District outside of the 7.5 km buffer around Rex Graham Reserve SAC is judged to offer sufficient flexibility in terms of possible distributions that likely significant effects from the total housing provision alone on that European site can be ruled out.	Core Strategy Policy CS2: Natural Environment Core Strategy Policy CS13: Infrastructure and Developer Contributions Development Management Policy DM12: Mitigation, Enhancement, Management and Monitoring of Biodiversity Development Management Policy DM42: Open Space, Sport and Recreation Facilities Development Management Policy DM44: Rights of Way SALP Preferred policies which allocate development sites also require that "*...open space must be provided on all sites to address the site requirements and location.*" SALP Preferred Policies L1 and L2 for housing in Lakenheath / North Lakenheath, Policies RL1 and RL2 for housing in Red Lodge/ North Red Lodge, and Policy WR1 for housing in West Row additionally require development to provide measures for influencing recreation in the surrounding area to avoid a damaging increase in visitors to Breckland SPA. The Council has carried out an Accessible Natural Greenspace Study (Forest Heath District Council, 2016) to provide evidence on appropriate accessible open space that will support the planned growth in the District.	Unable to rule out likely significant effects on Breckland SAC and Breckland SPA. The mitigation described in column 2 should help to reduce the potential for the total housing provision proposed by the SIR to increase recreation pressure on Breckland SAC or Breckland SPA. It is judged, however, that these need to be more closely linked to the findings of the Accessible Natural Greenspace Study (Forest Heath District Council, 2016) to provide sufficient certainty that significant effects can be avoided.	To further strengthen the mitigation of recreation pressure and to ensure that the findings of the Council's Accessible Natural Greenspace Study are reflected when delivering new or enhanced open space it is recommended that: • The outline recreation pressure mitigation strategy described in the Accessible Natural Greenspace Study (Forest Heath District Council, 2016) be agreed with Natural England and then published as an evidence document supporting the Local Plan. • Open space requirements within the development allocation policies for each of the District's main settlements make appropriate reference to the corresponding mitigation measures for that settlement set out in the recreation pressure mitigation strategy. If these recommendations are adopted, likely significant effects can be ruled out at that time.

6 HRA Screening of housing distribution options

The housing distribution options

6.1 The SIR puts forward two options for the distribution of housing across the District in the period 2011-2031. Under all options, allocations would only be made to the top three levels of the settlement hierarchy – Market Towns, Key Service Centres and Primary Villages - which are most likely to provide sustainable locations for growth.

6.2 Table 6.1 summarises the additional housing provision at each settlement under each of the distribution options. Existing commitments and completions and expected windfalls are also included for reference.

Table 6.1 Summary of housing distribution options in the SIR in the period 2011-2031

Settlement	Existing commitments and completions (2011-2015)	Windfall	Option 1 (Council's preferred) Higher growth at Mildenhall, Red Lodge and Primary Villages, enabling lower growth at Newmarket	Option 2 Higher growth at Newmarket, enabling lower growth at Mildenhall, Red Lodge and Primary Villages
MARKET TOWNS				
Brandon	55	-	70	70
Mildenhall	177	-	1,350	1,150
Newmarket	288	-	680	1,080
KEY SERVICE CENTRES				
Lakenheath	76	-	800	800
Red Lodge	704	-	950	850
PRIMARY VILLAGES	596	-	750	650
OTHER POTENTIAL	-	220	-	-
TOTAL	**1,988**	**220**	**4,600**	**4,600**

HRA Screening assessment

6.3 An assessment was carried out to identify the potential for the Core Strategy SIR housing distribution options to have likely significant effects on any of the European sites scoped into the HRA.

6.4 As explained in Chapter 4, certain types of potential effects from development on European sites are more appropriately assessed via the HRA Screening of options for total housing provision (see Chapter 5) or via the HRA Screening of the Site Allocations Local Plan (contained in a separate report). The HRA Screening of housing distribution options is therefore concerned with the following types of potential effect:

- Disturbance and other urban edge effects from construction or occupation of buildings.
- Disturbance from construction or operation of roads.
- Recreation pressure.
- Water quantity.
- Water quality.
- Air quality.

6.5 The HRA Screening is based on the evidence and assumptions set out in Chapter 4. When applying relevant screening assessment buffer distances (such as that 'disturbance and other urban edge effects' can be ruled out when development is more than 1,500 m from relevant components of Breckland SPA or functionally linked habitat), it is assumed that all development set out in the housing distribution options would occur within 2.0 km of the existing boundary of a named Market Town or Key Service Centre or within 1.0 km of a named Primary Village; this is judged sufficient to allow for the largest likely settlement extensions.

6.6 For each type of potential effect, the following tables set out an assessment of the potential for housing distribution to each settlement to have a likely significant effect on a European site at each of the scales of growth provided by the two options.

6.7 For each type of potential effect, a table sets out:

- The settlement to which housing is provided.
- The potential for a likely significant effect as a result of housing at that settlement, prior to consideration of mitigation.
- Mitigation available where the potential for likely significant effects is identified. This may be, for example, from adopted Core Strategy policies other than CS7 (which is being reviewed by the SIR) or adopted policies in the Development Management Policies Local Plan.
- A conclusion as to whether likely significant effects ('LSE' in the table) on European sites can be ruled out in relation to the scale of housing provision to the settlement in question under each of the distribution options.
- Recommendations on how likely significant effects which could not be ruled out at the Preferred Options stage might be avoided or mitigated as plan-making progresses.

Disturbance and other urban edge effects from construction or occupation of buildings

Settlement	Able to rule out potential for LSE prior to mitigation? (see Figure 4.1 for locations of settlements in relation to buffers)	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
Brandon	No – not possible to rule out potential for likely significant effects on Breckland SPA, prior to mitigation. All of Brandon and all but a very small area of the land on the boundary of the existing built up area are within 1,500 m of components of Breckland SPA designated for Stone Curlew. More than half of Brandon and all of its southern and eastern boundaries (including the small area not within the Stone Curlew buffer) are within 400m of components of Breckland SPA designated for Woodlark and Nightjar. Likely significant effects on Breckland SPA cannot, therefore, be ruled out no matter where housing is allocated within/adjacent to the settlement and such effects cannot be ruled out for either of the distribution options.	Core Strategy Policy CS2: Natural Environment Policy CS2 of the Core Strategy requires project level HRA for development proposals within the Breckland SPA constraint zones and states that development likely to lead to an adverse effect on integrity will not be allowed. Whilst this policy should prevent adverse effects on integrity of the SPA when individual development proposals come forward, it is judged inappropriate to rely on this policy at the Screening stage of HRA for the SIR which does not identify specific development sites.	No	No	Identify preferred sites in line with the SIR housing provision to Brandon. For those located within the constraint zones for Breckland SPA identified in the Forest Heath Core Strategy, subject them to project level HRA in line with the requirements of Core Strategy Policy CS2. This should ensure that the housing distribution option in the SIR (and site allocations in the SALP) will not have an adverse effect on the integrity of Breckland SPA.
Mildenhall	Yes - ruled out possibility that a likely significant effect could not be avoided under any conceivable allocation of the housing distribution figure within or adjoining the settlement. The eastern half of Mildenhall and adjoining greenfield land fall within 1,500 m of components of Breckland SPA designated for Stone Curlew and within 400m of components of Breckland SPA designated for Woodlark and Nightjar. Data supplied by the Council at the Issues and Options stage indicated that the capacity of all Mildenhall site options which do not intersect the SPA or these buffer areas is 1,644 dwellings, higher than the provision under Option 1 or Option 2. It should therefore be possible to achieve an allocation which avoids likely significant effects. The effects of allocating specific sites are tested through the HRA of the SALP.	Not required.	Yes	Yes	None.
Newmarket	Yes - ruled out possibility that a likely significant effect could not be avoided under any conceivable allocation of the housing distribution	Not required.	Yes	Yes	None.

Settlement	Able to rule out potential for LSE prior to mitigation? (see Figure 4.1 for locations of settlements in relation to buffers)	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
	figure within or adjoining the settlement. No European sites overlay the settlement and the nearest Breckland SPA constraint zone is 4.9 km from the existing settlement boundary. It should therefore be possible to achieve an allocation which avoids likely significant effects. The effects of allocating specific sites are tested through the HRA of the SALP.				
Lakenheath	Yes - ruled out possibility that a likely significant effect could not be avoided under any conceivable allocation of the housing distribution figure within or adjoining the settlement. Whilst small sections of the land immediately to the east of Lakenheath's settlement boundary are part of the Breckland SAC or within Breckland SPA's constraint zones for Stone Curlew/Stone Curlew nesting attempts, it should be possible to avoid effects on European sites by development on infill sites or at other parts of the settlement boundary under all both options.	Not required.	Yes	Yes	None.
Red Lodge	Yes - ruled out possibility that a likely significant effect could not be avoided under any conceivable allocation of the housing distribution figure within or adjoining the settlement. The south eastern corner of Red Lodge and much of the land to its east and south are within Breckland SPA's constraint zones for Stone Curlew/Stone Curlew nesting attempts. Data supplied by the Council at Issues and Options stage indicate that the capacity of all Red Lodge site options which do not intersect the SPA or its constraint zones is 6,275 dwellings (site options RL/15 and RL/09 were included in this calculation as only a small part of the land within their boundaries is within Stone Curlew constraint zones). It should therefore be possible to achieve an allocation which avoids likely significant effects. The effects of allocating specific sites are tested through the HRA of the SALP.	Not required.	Yes	Yes	None.
Primary Villages	Yes - ruled out possibility that a likely significant effect could not be avoided under any conceivable allocation of the housing distribution figure within or adjoining the settlement. *Beck Row* Whilst areas of land approximately 1 km to the east of Beck Row's settlement boundary are within Breckland SPA's constraint zones for Stone Curlew/Stone Curlew nesting attempts, Woodlark and Nightjar it should be possible to avoid direct effects on European sites by development on infill sites or at other parts of the settlement	Not required.	Yes	Yes	None.

Settlement	Able to rule out potential for LSE prior to mitigation? (see Figure 4.1 for locations of settlements in relation to buffers)	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
	boundary under all distribution options. *West Row* No European sites overlay the settlement and the nearest Breckland SPA constraint zone is 2.8 km from the existing settlement boundary. *Exning* No European sites overlay the settlement and the nearest Breckland SPA constraint zone is 6.9 km from the existing settlement boundary. *Kentford* Much of Kentford and its environs fall within the Breckland SPA Stone Curlew/ Stone Curlew nesting attempts constraint zones. Examining the housing site options put forward at Issues and Options stage in the Site Allocations Local Plan it was apparent that K/01 was the only site option being considered outside of the constraint zones, this option having a capacity of 105 dwellings. It should be possible to achieve an allocation which avoids likely significant effects by focussing growth at the Primary Villages of Beck Row, West Row and Exning and ensuring that any allocations to Kentford are outside of the Breckland SPA Stone Curlew/ Stone Curlew nesting attempts constraint zones. The effects of allocating specific sites are tested through the HRA of the SALP.				

Disturbance from construction or operation of roads

Settlement	Able to rule out potential for LSE prior to mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
Brandon	No – not possible to rule out potential for likely significant effects on Breckland SPA, prior to mitigation. Potential for likely significant effects on Stone Curlew population of Breckland SPA if development provided for by the SIR would result in the need for any new road infrastructure or road improvements to increase capacity which: • overlaps, or is within 1,500 m of, SSSI components of	None identified.	No	No	It is recommended that the Council's forthcoming Transport Study identifies the whether the development proposed by the SIR gives rise to the need for new road infrastructure or road improvements to increase

Settlement	Able to rule out potential for LSE prior to mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
	Breckland SPA designated for Stone Curlew; or • overlaps, or is within 1,500 m of, Stone Curlew habitat areas functionally linked to Breckland SPA. Insufficient information currently exists to rule out the need for such road improvements.				capacity on any roads (including those outside the Forest Heath District boundary) within the zones identified in column 2. If no such road improvements are identified then likely significant effects can be ruled out at that stage, otherwise Appropriate Assessment will be required.
Mildenhall	No – not possible to rule out potential for likely significant effects on Breckland SPA, prior to mitigation. Justification as for Brandon (above).	None identified	No	No	As for Brandon (above).
Newmarket	No – not possible to rule out potential for likely significant effects on Breckland SPA, prior to mitigation. Justification as for Brandon (above).	None identified	No	No	As for Brandon (above).
Lakenheath	No – not possible to rule out potential for likely significant effects on Breckland SPA, prior to mitigation. Justification as for Brandon (above).	None identified	No	No	As for Brandon (above).
Red Lodge	No – not possible to rule out potential for likely significant effects on Breckland SPA, prior to mitigation. Justification as for Brandon (above).	None identified	No	No	As for Brandon (above).
Primary Villages	No – not possible to rule out potential for likely significant effects on Breckland SPA, prior to mitigation. Justification as for Brandon (above).	None identified	No	No	As for Brandon (above).

Recreation pressure

Settlement	Able to rule out potential for LSE prior to mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations

Settlement	Able to rule out potential for LSE prior to mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
Brandon	No – not possible to rule out potential for likely significant effects on Breckland SAC and SPA, prior to mitigation. The potential exists for recreational pressure to result in loss of or damage to the designated habitats of Breckland SAC from any housing development within 7.5 km of its boundary; Brandon is approximately 1.3 km from the closest component of the SAC. The potential exists for recreational pressure to result in mortality or disturbance of the Annex I birds of Breckland SPA from any housing development within 7.5 km of its boundary; Brandon is directly adjacent to the SPA.	Core Strategy Policy CS2: Natural Environment Core Strategy Policy CS13: Infrastructure and Developer Contributions Development Management Policy DM12: Mitigation, Enhancement, Management and Monitoring of Biodiversity Development Management Policy DM42: Open Space, Sport and Recreation Facilities Development Management Policy DM44: Rights of Way SALP Preferred policies which allocate development sites also require that "*…open space must be provided on all sites to address the site requirements and location.*" SALP Preferred Policies L1 and L2 for housing in Lakenheath / North Lakenheath, Policies RL1 and RL2 for housing in Red Lodge/ North Red Lodge, and Policy WR1 for housing in West Row additionally require development to provide measures for influencing recreation in the surrounding area to avoid a damaging increase in visitors to Breckland SPA. The Council has carried out an Accessible Natural Greenspace Study (Forest Heath District Council, 2016) to provide evidence on appropriate accessible open space that will support the planned growth in the District. The mitigation above should help to reduce the potential for the total	No	No	To further strengthen the mitigation of recreation pressure and to ensure that the findings of the Council's Accessible Natural Greenspace Study are reflected when delivering new or enhanced open space it is recommended that: • The outline recreation pressure mitigation strategy described in the Accessible Natural Greenspace Study (Forest Heath District Council, 2016) be agreed with Natural England and then published as an evidence document supporting the Local Plan. • Open space requirements within the development allocation policies for each of the District's main settlements make appropriate reference to the corresponding mitigation measures for that settlement set out in the recreation pressure mitigation strategy. If these recommendations are adopted, likely significant effects can be ruled out at that time.

Settlement	Able to rule out potential for LSE prior to mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
		housing provision proposed by the SIR to increase recreation pressure on the identified European sites. It is judged, however, that these need to be more closely linked to the findings of the Accessible Natural Greenspace Study (Forest Heath District Council, 2016) to provide sufficient certainty that significant effects can be avoided.			
Mildenhall	No – not possible to rule out potential for likely significant effects on Breckland SAC, Breckland SPA and Rex Graham Reserve SAC, prior to mitigation. The potential exists for recreational pressure to result in loss of or damage to the designated habitats of Breckland SAC from any housing development within 7.5 km of its boundary; Mildenhall is approximately 2.1 km from the closest component of the SAC. The potential exists for recreational pressure to result in mortality or disturbance of the Annex I birds of Breckland SPA from any housing development within 7.5 km of its boundary; Mildenhall is directly adjacent to the SPA. The potential exists for recreational pressure to result in loss of or damage to the designated habitats of Rex Graham Reserve SAC from any housing development within 7.5 km of its boundary; Mildenhall is approximately 1.3 km from the SAC.	As for Brandon (above).	No	No	As for Brandon (above).
Newmarket	Yes - ruled out possibility that a likely significant effect could not be avoided under any conceivable allocation of the housing distribution figure within or adjoining the settlement. The potential exists for recreational pressure to result in mortality or disturbance of the Annex I birds of Breckland SPA from any housing development within 7.5 km of its boundary. Whilst the eastern edge of Newmarket is	Not required.	Yes	Yes	None.

Settlement	Able to rule out potential for LSE prior to mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
	approximately 6.9 km from the closest component of the SPA, much of the settlement boundary and an assumed 2.0 km area of search around it are more than 7.5 km from the SPA. It should therefore be possible to achieve an allocation which avoids likely significant effects. The effects of allocating specific sites are tested through the HRA of the SALP.				
Lakenheath	No – not possible to rule out potential for likely significant effects on Breckland SAC and Breckland SPA, prior to mitigation. The potential exists for recreational pressure to result in loss of or damage to the designated habitats of Breckland SAC from any housing development within 7.5 km of its boundary; Lakenheath is approximately 0.1 km from the closest component of the SAC. The potential exists for recreational pressure to result in mortality or disturbance of the Annex I birds of Breckland SPA from any housing development within 7.5 km of its boundary; Lakenheath approximately 1.8 km from the closest component of the SPA. The potential exists for recreational pressure to result in loss of or damage to the designated habitats of Rex Graham Reserve SAC from any housing development within 7.5 km of its boundary. Whilst the southern edge of Lakenheath is approximately 7.0 km from the SAC, much of the settlement boundary and an assumed 2.0 km area of search around it are more than 7.5 km from the SAC. It should therefore be possible to achieve an allocation which avoids likely significant effects. The effects of allocating specific sites are tested through the HRA of the SALP.	As for Brandon (above).	No	No	As for Brandon (above).
Red Lodge	No – not possible to rule out potential for likely significant effects on Breckland SAC, Breckland SPA and Rex Graham Reserve SAC, prior to mitigation.	As for Brandon (above).	No	No	As for Brandon (above).

Settlement	Able to rule out potential for LSE prior to mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
	The potential exists for recreational pressure to result in loss of or damage to the designated habitats of Breckland SAC from any housing development within 7.5 km of its boundary; Red Lodge is approximately 3.9 km from the closest component of the SAC. The potential exists for recreational pressure to result in mortality or disturbance of the Annex I birds of Breckland SPA from any housing development within 7.5 km of its boundary; Red Lodge approximately 1.2 km from the closest component of the SPA. The potential exists for recreational pressure to result in loss of or damage to the designated habitats of Rex Graham Reserve SAC from any housing development within 7.5 km of its boundary; Red Lodge is approximately 4.4 km from the SAC.				
Primary Villages	No – not possible to rule out potential for likely significant effects on Breckland SAC, Breckland SPA and Rex Graham Reserve SAC, prior to mitigation. The potential exists for recreational pressure to result in loss of or damage to the designated habitats of Breckland SAC from any housing development within 7.5 km of its boundary. Beck Row, West Row and Kentford fall within this distance; Exning and an assumed 1.0 km area of search around it do not. The potential exists for recreational pressure to result in mortality or disturbance of the Annex I birds of Breckland SPA from any housing development within 7.5 km of its boundary. Beck Row, West Row and Kentford fall within this distance; Exning and an assumed 1.0 km area of search around it do not. The potential exists for recreational pressure to result in loss of or damage to the designated habitats of Rex Graham Reserve SAC from any housing development within 7.5 km of its	As for Brandon (above).	No	No	As for Brandon (above).

Settlement	Able to rule out potential for LSE prior to mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
	boundary. Beck Row and West Row fall within this distance; Exning and an assumed 1.0 km area of search around it do not. Whilst parts of an assumed 1.0 km area of search around Kentford are within 7.5 km of the SAC, none of the settlement boundary and much of the area of search do not there it is assumed that likely significant effects could be avoided.				

Water quantity

Settlement	Able to rule out potential for LSE prior to mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
Brandon	No – unable to rule out likely significant effects, prior to mitigation. The European sites potentially affected would depend on the particular schemes required, if any, to maintain supply-demand balance in water resources. The AWS WRMP 2015-2040 has been subject to HRA Screening with a finding of no likely significant effects. However, although the scale of housing growth per annum preferred by the SIR during 2015-2040 is lower than that in the Core Strategy, it is not possible to directly compare the amounts of residential growth assumed by the WRMP to that now proposed by this option since the Resource Zones span multiple local authority areas and do not follow their boundaries. It is therefore possible that the SIR housing provision would exceed the dwelling growth for Forest Heath District assumed by the WRMP and that additional water resources would need to be developed, with potential effects on European sites (the particular European sites affected would depend on the schemes devised).	The Environment Agency's ongoing abstraction licensing regime will ensure that the scale of water abstraction from existing water resources will not result in likely significant effects on any European site. Development Management Policy DM7: Sustainable Design and Construction	No	No	It is recommended the Council seeks confirmation from AWS, via its forthcoming update to the Water Cycle Study, that the amount of residential growth proposed by the SIR is consistent with the planning assumptions of the WRMP 2015 such that no additional water resource schemes are required to maintain supply-demand balance and the findings of the HRA of the WRMP can therefore be relied upon. If this confirmation is received, likely significant effects can be ruled out at that time.
Mildenhall	As for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).
Newmarket	As for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).
Lakenheath	As for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).

Settlement	Able to rule out potential for LSE prior to mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
Red Lodge	As for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).
Primary Villages	As for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).

Water quality

Treated wastewater discharges

Settlement	Able to rule out potential for LSE prior to mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
Brandon	No – not possible to rule out potential for likely significant effects on relevant European sites identified in Table 4.3, i.e. Ouse Washes SAC/SPA/Ramsar site, The Wash SPA/Ramsar site, The Wash and North Norfolk Coast SAC, Breckland SAC (Weeting Heath component SSSI), prior to mitigation. All of the European sites identified above are hydrologically connected to Brandon WwTW and sensitive to changes in water quality. As detailed in Chapter 4, insufficient up-to-date information exists to determine whether the scale of growth proposed at this settlement by the SIR can be accommodated by the WwTW without deterioration of downstream water quality.	Core Strategy Policy CS13: Infrastructure and Developer Contributions Development Management Policy DM14: Protecting and Enhancing Natural Resources, Minimising Pollution and Safeguarding from Hazards. Environmental permitting regime operated by the Environment Agency. Notwithstanding the mitigation above and in the absence of up-to-date evidence on wastewater treatment capacity, it is judged that sufficient uncertainty exists that it is not possible to rule out likely significant effects on a precautionary basis.	No	No	It is recommended that the Council's forthcoming update to its Water Cycle Study confirms: • the hydrological connectivity between the discharge point of the WwTW serving this settlement and European sites; • whether upgrades are required to wastewater treatment infrastructure to accommodate the scale of growth proposed by the SIR at this settlement without a reduction in downstream water quality; and • that there are no technically insurmountable barriers to delivering any upgrades required. Assuming no technically insurmountable capacity issues, it should be possible to rule out likely significant effects by reliance on the described mitigation.

Settlement	Able to rule out potential for LSE prior to mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
Mildenhall	No – not possible to rule out potential for likely significant effects on relevant European sites identified in Table 4.3, i.e. Ouse Washes SAC/SPA/Ramsar site, The Wash SPA/Ramsar site, The Wash and North Norfolk Coast SAC, prior to mitigation. Justification as for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).
Newmarket	No – not possible to rule out potential for likely significant effects on relevant European sites identified in Table 4.3, i.e. Ouse Washes SAC/SPA/Ramsar site, The Wash SPA/Ramsar site, The Wash and North Norfolk Coast SAC, Fenland SAC, Chippenham Fen Ramsar site, Wicken Fen Ramsar site, prior to mitigation. Justification as for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).
Lakenheath	No – not possible to rule out potential for likely significant effects on relevant European sites identified in Table 4.3, i.e. Ouse Washes SAC/SPA/Ramsar site, The Wash SPA/Ramsar site, The Wash and North Norfolk Coast SAC, prior to mitigation. Justification as for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).
Red Lodge	No – not possible to rule out potential for likely significant effects on relevant European sites identified in Table 4.3, i.e. Ouse Washes SAC/SPA/Ramsar site, The Wash SPA/Ramsar site, The Wash and North Norfolk Coast SAC, prior to mitigation. Justification as for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).
Primary Villages	No – not possible to rule out potential for likely significant effects, prior to mitigation, on relevant European sites identified in Table 4.3, i.e.: For development at Beck Row and West Row: Ouse Washes SAC/SPA/Ramsar site, The Wash SPA/Ramsar site, The Wash and North Norfolk Coast SAC. For development at Kentford and Exning: Ouse Washes SAC/SPA/Ramsar site, The Wash SPA/Ramsar site, The Wash and North Norfolk Coast SAC, Fenland SAC, Chippenham Fen Ramsar site, Wicken Fen Ramsar site.	As for Brandon (above).	No	No	As for Brandon (above).

Settlement	Able to rule out potential for LSE prior to mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
	Justification as for Brandon (above).				

Combined sewer overflows

Settlement	Able to rule out potential for LSE prior to mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
Brandon	No – not possible to rule out potential for likely significant effects on any European sites identified in para. 4.80, i.e. Breckland SAC; Fenland SAC, Chippenham Fen Ramsar site, Wicken Fen Ramsar site; Ouse Washes SAC, SPA and Ramsar site; The Wash and North Norfolk Coast SAC and The Wash SPA and Ramsar site; prior to mitigation. All of the European sites above are sensitive to changes in water quality and may be hydrologically connected to development areas within Forest Heath where combined sewer overflows could occur. As detailed in Chapter 4, insufficient up-to-date information exists to determine whether the scale of growth proposed at this settlement by the SIR can be accommodated by the sewerage network without the risk of combined sewer overflows and deterioration in downstream water quality.	Core Strategy Policy CS13: Infrastructure and Developer Contributions Development Management Policy DM14: Protecting and Enhancing Natural Resources, Minimising Pollution and Safeguarding from Hazards. Notwithstanding the mitigation above and in the absence of up-to-date evidence on sewerage network capacity, it is judged that sufficient uncertainty exists that it is not possible to rule out likely significant effects on a precautionary basis.	No	No	It is recommended that the Council's forthcoming update to its Water Cycle Study confirms: • the hydrological connectivity between the sewerage network serving this settlement and the European sites listed in column 2; • whether upgrades are required to the sewerage network to accommodate the scale of growth proposed by the SIR at this settlement without a reduction in downstream water quality; and • that there are no technically insurmountable barriers to delivering any upgrades required. Assuming no technically insurmountable capacity issues, it should be possible to rule out likely significant effects by reliance on the described mitigation.
Mildenhall	As for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).
Newmarket	As for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).
Lakenheath	As for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).
Red Lodge	As for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).

Settlement	Able to rule out potential for LSE prior to mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
Primary Villages	As for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).

Contaminated surface runoff

Settlement	Able to rule out potential for LSE prior to mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
Brandon	No – not possible to rule out potential for likely significant effects on any European sites identified in para. 4.80, i.e. Breckland SAC; Fenland SAC, Chippenham Fen Ramsar site, Wicken Fen Ramsar site; Ouse Washes SAC, SPA and Ramsar site; The Wash and North Norfolk Coast SAC and The Wash SPA and Ramsar site; prior to mitigation. All of the European sites above are sensitive to changes in water quality and may be hydrologically connected to development areas within Forest Heath from which contaminated surface run-off could arise.	Development Management Policy DM6: Flooding and Sustainable Drainage Development Management Policy DM14: Protecting and Enhancing Natural Resources, Minimising Pollution and Safeguarding from Hazards. The policy requirements for all new development to manage on-site drainage (for example by use of SUDS) and for all development proposals to ensure no deterioration to water quality provide sufficient mitigation to allow likely significant effects to be ruled out.	Yes	Yes	None.
Mildenhall	As for Brandon (above).	As for Brandon (above).	Yes	Yes	As for Brandon (above).
Newmarket	As for Brandon (above).	As for Brandon (above).	Yes	Yes	As for Brandon (above).
Lakenheath	As for Brandon (above).	As for Brandon (above).	Yes	Yes	As for Brandon (above).
Red Lodge	As for Brandon (above).	As for Brandon (above).	Yes	Yes	As for Brandon (above).
Primary Villages	As for Brandon (above).	As for Brandon (above).	Yes	Yes	As for Brandon (above).

Air quality

Settlement	Able to rule out potential for LSE prior to mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
Brandon	No – unable to rule out likely significant effects on, prior to mitigation, on: Breckland SAC and SPA; Devil's Dyke SAC; Fenland SAC, Chippenham Fen Ramsar site, and Wicken Fen Ramsar site; Norfolk Valley Fens SAC; Rex Graham Reserve SAC. Each of these European sites has designated features that are sensitive to air pollution and/or air pollution is identified in Site Improvement Plans as a pressure or threat on the site. Insufficient information is currently available to determine whether the growth proposed by the SIR at this settlement, when taken together with that proposed at the other settlements in this table, will result in significant road traffic growth within 200 m of any of these European sites.	Core Strategy Policy CS2: Natural Environment Policy CS 12: Strategic Transport Improvement and Sustainable Transport. Development Management Policy DM22: Residential Design. Core Strategy policy CS2 prevents the development of new road infrastructure or road improvements within 200 m of SACs. Whilst this should allow likely significant effects from road traffic pollution to be ruled out in relation to new or improved roads, the potential remains for effects from significant traffic increases on existing roads.	No	No	It is recommended that the Council's forthcoming Transport Study identifies road corridors (including those outside of Forest Heath District boundary) within 200 m of the named European sites where the scale and distribution of development proposed by the SIR means it is likely that: • daily traffic flows will change by 1,000 AADT or more; or • Heavy Duty Vehicle (HDV) flows will change by 200 AADT or more; or • daily average speed will change by 10 km/hr or more; or • peak hour speed will change by 20 km/hr or more. In addition, areas within the 200 m buffer around these European sites likely to experience higher-than-average pollution concentrations, such as tunnel portals, roundabouts and junctions, should be identified. If no such locations are identified then likely significant effects can be ruled out at that stage, otherwise Appropriate Assessment will be required.
Mildenhall	As for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).
Newmarket	As for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).
Lakenheath	As for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).
Red Lodge	As for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).
Primary	As for Brandon (above).	As for Brandon (above).	No	No	As for Brandon (above).

Settlement	Able to rule out potential for LSE prior to mitigation?	Mitigation available where likely significant effects identified (see Chapter 4 for details)	LSE ruled out for Option 1?	LSE ruled out for Option 2?	Recommendations
Villages					

7 Conclusions and recommendations

7.1 This section summarises the conclusions of the HRA Screening of the total housing provision and housing distribution options as well as the recommendations made where likely significant effects could not be ruled out at the current Preferred Options stage of plan making.

7.2 As previously described, the HRA Screening of the SIR considers the potential for the following types of effect:

- Disturbance and other urban edge effects from construction or occupation of buildings.
- Disturbance from construction or operation of roads.
- Recreation pressure.
- Water quantity.
- Water quality.
- Air quality.

7.3 The potential for direct loss or physical damage due to construction is considered in the HRA of the Core Strategy SALP which is being carried out in parallel with the HRA of the SIR and reported on separately.

Consideration of 'in-combination' effects

7.4 As described in Chapter 3, other relevant plans and projects have been reviewed for their potential to have significant effects in combination with those of the SIR.

7.5 The review of other relevant plans (see Appendix 1) revealed a number of potential effects on the European sites scoped into the HRA of the SIR, for example recreation pressure from the development provided for by Breckland Core Strategy on Breckland SAC/SPA. However, in each case the HRA of that plan was able to reach a conclusion of no likely significant effects after taking into account mitigation. No residual effects which required consideration in combination with those of the SIR were identified. In effect, the iterative operation of the HRA process alongside the plan-making process has ensured that each plan has mitigated any additional pressure it could place on European sites.

7.6 Similarly, the review of other relevant projects (see Appendix 1) revealed no residual effects which required consideration in combination with those of the SIR.

Disturbance and other urban edge effects from construction or occupation of buildings

7.7 Prior to consideration of existing mitigation, the potential for likely significant effects due to disturbance and other urban edge effects from construction or occupation of buildings was identified in relation to Breckland SPA for both of the housing distribution options set out in the SIR.

7.8 As detailed in Chapter 4 and Chapter 6, this was due to the close proximity of Brandon to Breckland SPA. No matter where housing is allocated within or adjacent to the settlement, it would be likely to fall within 1,500 m of components of Breckland SPA designated for Stone Curlew and/or within 400 m of components of Breckland SPA designated for Woodlark or Nightjar.

Existing mitigation which could rule out likely significant effects

7.9 Policy CS2 of the Core Strategy requires project level HRA for development proposals within the Breckland SPA HRA constraint zones that correspond to the distances used by this HRA to assess the potential for disturbance and other urban edge effects. It further states that development likely to lead to an adverse effect on integrity will not be allowed. However, it is judged inappropriate to rely on this policy at the Screening stage of HRA for the SIR which does not identify specific development sites. No other existing mitigation is judged capable of avoiding the potential effects identified.

HRA Screening conclusion

Likely significant effects on Breckland SPA in the form of disturbance and other urban edge effects from construction or occupation of buildings cannot be ruled out under SIR housing distribution Option 1 or Option 2.

Recommendations

7.10 Identify preferred sites in line with the SIR housing provision to Brandon and, for those located within the constraint zones for Breckland SPA identified in the Forest Heath Core Strategy, subject them to project level HRA in line with the requirements of Core Strategy Policy CS2. This should ensure that the housing distribution option in the SIR (and site allocations in the SALP) will not have an adverse effect on the integrity of Breckland SPA.

Disturbance from construction or operation of roads

7.11 Prior to consideration of existing mitigation, the potential for likely significant effects in the form of disturbance from construction or operation of roads was identified in relation to Breckland SPA for both of the housing distribution options set out in the SIR.

7.12 As detailed in Chapter 4 and Chapter 6, this was because insufficient information exists at this stage to determine whether development provided for by the SIR would result in the need for any new road infrastructure or road improvements to increase capacity which:

- overlaps, or is within 1,500 m of, SSSI components of Breckland SPA designated for Stone Curlew; or
- overlaps, or is within 1,500 m of, Stone Curlew habitat areas functionally linked to Breckland SPA.

Existing mitigation which could rule out likely significant effects

7.13 No existing mitigation was identified which would be capable of avoiding the potential effects identified.

HRA Screening conclusion

Likely significant effects on Breckland SPA in the form of disturbance from construction or operation of roads cannot be ruled out under SIR housing distribution Option 1 or Option 2.

Recommendations

7.14 It is recommended that the Council's forthcoming Transport Study identifies the whether the development proposed by the SIR gives rise to the need for new road infrastructure or road improvements to increase capacity on any roads (including those outside the Forest Heath District boundary):

- within 1,500 m of, SSSI components of Breckland SPA designated for Stone Curlew; or
- within 1,500 m of, Stone Curlew habitat areas functionally linked to Breckland SPA.

7.15 If no such road improvements are identified then likely significant effects can be ruled out at that stage, otherwise Appropriate Assessment will be required.

Recreation pressure

7.16 Prior to consideration of existing mitigation, the potential for likely significant effects due to recreation pressure was identified in relation to Breckland SAC and Breckland SPA from the total housing provision.

7.17 As described in Chapter 4 and Chapter 5 and shown in Figure 4.2, this was because 7.5 km buffers around Breckland SAC and Breckland SPA cover most of Forest Heath District and it was judged unlikely that any reasonable alternative distribution of 6,800 homes would be able to avoid these buffer areas entirely.

7.18 The HRA Screening assessment of the two options for distribution of the total housing provision to specific settlements within the District identified the potential for likely significant effects prior to consideration of existing mitigation due to recreation pressure from both Option 1 and Option 2. As described in Chapter 6, under both options, this was due to the likelihood that housing provisions within or adjacent to the following settlements would fall within 7.5 km of Breckland SAC, Breckland SPA and/or Rex Graham Reserve SAC as follows:

- Brandon – potential for likely significant effects on Breckland SAC and Breckland SPA under Option 1 and Option 2.
- Mildenhall – potential for likely significant effects on Breckland SAC, Breckland SPA and Rex Graham Reserve SAC under Option 1 and Option 2.
- Lakenheath - potential for likely significant effects on Breckland SAC and Breckland SPA under Option 1 and Option 2.
- Red Lodge - potential for likely significant effects on Breckland SAC, Breckland SPA and Rex Graham Reserve SAC under Option 1 and Option 2.
- Primary Villages - potential for likely significant effects on Breckland SAC, Breckland SPA and Rex Graham Reserve SAC under Option 1 and Option 2.

Existing mitigation which could rule out likely significant effects

7.19 As described in Chapter 4, mitigation of recreation pressure is available from a number of existing sources as follows:

- Core Strategy Policy CS2: Natural Environment.
- Core Strategy Policy CS13: Infrastructure and Developer Contributions and SPD guidance (Forest Heath District Council, 2011) on how open space requirements will be implemented.
- Development Management Policy DM12: Mitigation, Enhancement, Management and Monitoring of Biodiversity.
- Development Management Policy DM42: Open Space, Sport and Recreation Facilities.
- Development Management Policy DM44: Rights of Way.
- SALP Preferred policies which allocate development sites also require that "…open space must be provided on all sites to address the site requirements and location."
- SALP Preferred Policies M1 and M2 for housing in Mildenhall, N1 for housing in Newmarket, L1 and L2 for housing in Lakenheath, RL1 and RL2 for housing in Red Lodge, and WR1 for housing in West Row additionally require development to provide measures for influencing recreation in the surrounding area to avoid a damaging increase in visitors to Breckland SPA.
- The Council has carried out an Accessible Natural Greenspace Study (Forest Heath District Council, 2016) to provide evidence on appropriate accessible open space that will support the planned growth in the District.

7.20 The mitigation above should help to reduce the potential for the total housing provision proposed by the SIR to increase recreation pressure on the European sites identified above. It is judged, however, that open space provided under the policies above needs to be more closely linked to the findings of the Accessible Natural Greenspace Study (Forest Heath District Council, 2016) to provide sufficient certainty that significant effects can be avoided.

HRA Screening conclusion

Likely significant effects on Breckland SAC, Breckland SPA and Rex Graham Reserve SAC in the form of recreation pressure cannot be ruled out from the SIR total housing provision or from SIR housing distribution Option 1 or Option 2.

Recommendations

7.21 To further strengthen the mitigation of recreation pressure and to ensure that the findings of the Council's Accessible Natural Greenspace Study are reflected when delivering new or enhanced open space it is recommended that:

- The outline recreation pressure mitigation strategy described in the Accessible Natural Greenspace Study (Forest Heath District Council, 2016) be agreed with Natural England and then published as an evidence document supporting the Local Plan.
- Open space requirements within the development allocation policies for each of the District's main settlements make appropriate reference to the corresponding mitigation measures for that settlement set out in the recreation pressure mitigation strategy.

7.22 If these recommendations are adopted, likely significant effects can be ruled out at that time.

Water quantity

7.23 Prior to consideration of existing mitigation, the potential for likely significant effects on water quantity was identified for the total housing provision set out in the SIR. The European sites potentially affected would depend on the particular schemes, if any, required to maintain supply-demand balance in water resources.

7.24 As detailed in Chapter 4 and Chapter 6, this was because it was not possible to directly compare the amounts of residential growth assumed by the WRMP to those proposed by the SIR.

Existing mitigation which could rule out likely significant effects

7.25 As described in Chapter 4, mitigation of effects on water quantity is available from the following existing sources:

- The Environment Agency's abstraction licensing regime.
- Development Management Policy DM7: Sustainable Design and Construction.

HRA Screening conclusion

Likely significant effects on European sites in relation to water quantity cannot be ruled out from either of the SIR housing distribution options. The European sites potentially affected would depend on the particular schemes required, if any, to maintain a supply-demand balance in water resources.

Recommendations

7.26 It is recommended that the Council seeks confirmation from AWS, via its forthcoming update to the Water Cycle Study, that the amount of residential growth proposed by the SIR is consistent with the planning assumptions of the WRMP 2015 such that no additional water resource schemes are required to maintain supply-demand balance and the findings of the HRA of the WRMP can therefore be relied upon.

7.27 If this confirmation is received, likely significant effects can be ruled out at that time.

Water quality

Treated wastewater discharges

7.28 Prior to consideration of existing mitigation, a potential for likely significant effects from treated wastewater discharges was identified in relation to both SIR housing distribution Option 1 and Option 2.

7.29 As detailed in Chapter 4 and Chapter 6, insufficient up-to-date information exists to determine whether the scale of growth proposed at each settlement by the SIR can be accommodated by the relevant WwTW without deterioration of downstream water quality. The European sites at which likely significant effects could not be ruled out in relation to housing provisions at each settlement were as follows:

- Brandon – potential for likely significant effects on Ouse Washes SAC/SPA/Ramsar site, The Wash SPA/Ramsar site, The Wash and North Norfolk Coast SAC, Breckland SAC (Weeting Heath component SSSI).
- Mildenhall – potential for likely significant effects on Ouse Washes SAC/SPA/Ramsar site, The Wash SPA/Ramsar site, The Wash and North Norfolk Coast SAC.
- Newmarket – potential for likely significant effects on Ouse Washes SAC/SPA/Ramsar site, The Wash SPA/Ramsar site, The Wash and North Norfolk Coast SAC, Fenland SAC, Chippenham Fen Ramsar site, Wicken Fen Ramsar site.
- Lakenheath - potential for likely significant effects on Ouse Washes SAC/SPA/Ramsar site, The Wash SPA/Ramsar site, The Wash and North Norfolk Coast SAC.
- Red Lodge - potential for likely significant effects on Ouse Washes SAC/SPA/Ramsar site, The Wash SPA/Ramsar site, The Wash and North Norfolk Coast SAC.
- Primary Villages - potential for likely significant effects on Ouse Washes SAC/SPA/Ramsar site, The Wash SPA/Ramsar site, The Wash and North Norfolk Coast SAC, Fenland SAC, Chippenham Fen Ramsar site, Wicken Fen Ramsar site.

Existing mitigation which could rule out likely significant effects

7.30 As described in Chapter 4, mitigation of recreation pressure is available from a number of existing sources as follows:

- Core Strategy Policy CS13: Infrastructure and Developer Contributions
- Development Management Policy DM14: Protecting and Enhancing Natural Resources, Minimising Pollution and Safeguarding from Hazards.
- Environmental permitting regime operated by the Environment Agency.

7.31 Notwithstanding the mitigation above and in the absence of up-to-date evidence on wastewater treatment capacity, sufficient uncertainty exists that it was not possible to rule out likely significant effects on a precautionary basis.

Combined sewer overflows

7.32 Prior to consideration of existing mitigation, a potential for likely significant effects from combined sewer overflows was identified in relation to both SIR housing distribution Option 1 and Option 2.

7.33 As detailed in Chapter 4 and Chapter 6, insufficient up-to-date information exists to determine whether the scale of growth proposed at any of the settlements by either of the SIR housing distribution options can be accommodated by the sewerage network without the risk of combined sewer overflows and deterioration in downstream water quality. Potential effects exist in relation to Breckland SAC; Fenland SAC, Chippenham Fen Ramsar site, and Wicken Fen Ramsar site; Ouse Washes SAC, SPA and Ramsar site; The Wash and North Norfolk Coast SAC and The Wash SPA and Ramsar site.

Existing mitigation which could rule out likely significant effects

7.34 As described in Chapter 4, mitigation of recreation pressure is available from a number of existing sources as follows:

- Core Strategy Policy CS13: Infrastructure and Developer Contributions
- Development Management Policy DM14: Protecting and Enhancing Natural Resources, Minimising Pollution and Safeguarding from Hazards.

7.35 Notwithstanding the mitigation above and in the absence of up-to-date evidence on sewerage network capacity, it is judged that sufficient uncertainty exists that it is not possible to rule out likely significant effects on a precautionary basis.

Contaminated surface runoff

7.36 Prior to consideration of existing mitigation, a potential for likely significant effects from contaminated surface runoff was identified in relation to both SIR housing distribution Option 1 and Option 2.

7.37 A number of European sites are sensitive to changes in water quality and may be hydrologically connected to development areas within Forest Heath from which contaminated surface run-off could arise. These are: Breckland SAC; Fenland SAC, Chippenham Fen Ramsar site, Wicken Fen Ramsar site; Ouse Washes SAC, SPA and Ramsar site; The Wash and North Norfolk Coast SAC and The Wash SPA and Ramsar site.

Existing mitigation which could rule out likely significant effects

7.38 As described in Chapter 4, mitigation of recreation pressure is available from a number of existing sources as follows:

- Development Management Policy DM6: Flooding and Sustainable Drainage
- Development Management Policy DM14: Protecting and Enhancing Natural Resources, Minimising Pollution and Safeguarding from Hazards.

7.39 The policy requirements for all new development to manage on-site drainage (for example by use of SUDS) and for all development proposals to ensure no deterioration to water quality provide sufficient mitigation to allow likely significant effects to be ruled out.

HRA Screening conclusion

Likely significant effects on water quality as a result of treated wastewater discharges or combined sewer overflows cannot be ruled out from SIR housing distribution Option 1 or Option 2 on the following European sites: Breckland SAC; Fenland SAC, Chippenham Fen Ramsar site, and Wicken Fen Ramsar site; Ouse Washes SAC, SPA and Ramsar site; The Wash and North Norfolk Coast SAC and The Wash SPA and Ramsar site.

Recommendations

7.40 It is recommended that the Council's forthcoming update to its Water Cycle Study confirms:

- the hydrological connectivity between European sites and the discharge points of the WwTW serving each settlement to which homes are provided;
- the hydrological connectivity between European sites and the sewerage network serving each settlement to which homes are provided;
- whether upgrades are required to wastewater treatment infrastructure or the sewerage network to accommodate the scale of growth proposed by the SIR at this settlement without a reduction in downstream water quality; and
- that there are no technically insurmountable barriers to delivering any upgrades required.

7.41 Assuming no technically insurmountable capacity issues, it should be possible to rule out likely significant effects by reliance on existing mitigation.

Air quality

7.42 Prior to consideration of existing mitigation, the potential for likely significant effects in relation to air quality was identified for both housing distribution options set out in the SIR. The European

sites for which effects could not be ruled out were: Breckland SAC and SPA; Devil's Dyke SAC; Fenland SAC, Chippenham Fen Ramsar site, and Wicken Fen Ramsar site; Norfolk Valley Fens SAC; Rex Graham Reserve SAC.

7.43 As detailed in Chapter 4 and Chapter 6, this was because each of these European sites has designated features that are sensitive to air pollution and/or air pollution is identified in Site Improvement Plans as a pressure or threat on the site. Insufficient information is currently available to determine whether the growth proposed by either of the SIR housing distribution options will result in significant road traffic growth within 200 m of any of these European sites.

Existing mitigation which could rule out likely significant effects

7.44 As described in Chapter 4, mitigation of effects on water quantity is available from the following existing sources:

- Core Strategy Policy CS2: Natural Environment
- Policy CS 12: Strategic Transport Improvement and Sustainable Transport.
- Development Management Policy DM22: Residential Design.

7.45 Core Strategy policy CS2 prevents the development of new road infrastructure or road improvements within 200 m of an SAC. Whilst this should allow likely significant effects from road traffic pollution to be ruled out in relation to new or improved roads, the potential remains for effects from significant traffic increases on existing roads.

HRA Screening conclusion

Likely significant effects in relation to air quality cannot be ruled out from the SIR housing distribution Option 1 or Option 2 on the following European sites: Breckland SAC and SPA; Devil's Dyke SAC; Fenland SAC, Chippenham Fen Ramsar site, and Wicken Fen Ramsar site; Norfolk Valley Fens SAC; Rex Graham Reserve SAC.

Recommendations

7.46 It is recommended that the Council's forthcoming Transport Study identifies road corridors (including those outside of Forest Heath District boundary) within 200 m of the named European sites where the scale and distribution of development proposed by the SIR means it is likely that:

- daily traffic flows will change by 1,000 AADT or more; or
- Heavy Duty Vehicle (HDV) flows will change by 200 AADT or more; or
- daily average speed will change by 10 km/hr or more; or
- peak hour speed will change by 20 km/hr or more.

7.47 In addition, areas within the 200 m buffer around these European sites likely to experience higher-than-average pollution concentrations, such as tunnel portals, roundabouts and junctions, should be identified.

7.48 If no such locations are identified then likely significant effects can be ruled out at that stage, otherwise Appropriate Assessment will be required.

Consultation and next steps

7.49 In line with the requirements of the Habitats Regulations, representations are being sought from Natural England on the HRA Screening set out in this report. The Council will have regard to representations received in carrying out further HRA work at the next stage of Plan-making. Feedback is also being sought from the Environment Agency, the RSPB and Suffolk Wildlife Trust as they are in a strong position to help identify relevant evidence to inform the HRA Screening. The Council has also chosen to publish the HRA Screening report alongside the Preferred Options consultation document to provide the general public with a reference point when commenting on the Plan.

7.50 The Preferred Options SIR will be followed by a Proposed Submission draft which is currently expected to be published for Regulation 19 consultation later in 2016. The Proposed Submission draft Local Plan document will be accompanied by an amended HRA Screening Report which will screen the proposals within the Plan and conclude whether they are likely to have a significant effect on any European site, either alone or in combination with other plans and projects. The HRA Screening at this stage will take account of any new evidence which could not readily be incorporated at the Preferred Options stage. If likely significant effects still cannot be ruled out then it will be necessary to proceed to an Appropriate Assessment to determine whether the Local Plan proposals will have an adverse effect on the integrity of any European site and to recommend appropriate avoidance and mitigation measures. The Appropriate Assessment should be undertaken before the Proposed Submission SIR is published.

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Appendix 1
Review of other relevant plans and projects

County or district level plans providing for development

Breckland Core Strategy (adopted 2009)

Plan Owner/ Competent Authority: Breckland Council

Related HRA/AA: Habitat Regulation Assessment: Habitats Regulation Assessment: Breckland Council Submission Core Strategy and Development Control Policies Document (November 2008) and **Habitat Regulation Assessment Breckland Council Site Specific Policies and Proposals Document Preferred options (May 2010)**

Summary of Plan proposals:

Housing provision: The Core Strategy makes provision for at least 19,100 new dwellings within the period 2001-2026 (Policy CP 1).

Employment land provision: The Core Strategy (Policy CP 3) supports the delivery of at least 6,000 jobs in the District to 2021 as identified for Breckland in the Regional Spatial Strategy

Conclusions on potential effects of relevance to European sites within scope of HRA of Forest Heath Local Plan

Following on from the initial screening assessment the following potential adverse effects were identified and addressed within the appropriate assessment:

- Direct effects of built development – the HRA recommended that the Core Strategy was amended to ensure that allocations and policies do not promote housing within the 1500m Stone Curlew avoidance zone and housing within that zone will not normally be supported. In exceptional circumstances, such as where existing development completely masks the new proposal from Breckland SPA/supporting habitat, project level HRA must be able to demonstrate that adverse effects upon the Breckland SPA Stone Curlew interest feature will be prevented.
- Indirect disturbance to Annex 1 birds - Reduction in density of Breckland SPA Annex I bird species (Stone Curlew, Nightjar, Woodlark) near to new housing. The HRA recommended that amendments to the Core Strategy were made to include policy wording or supporting text to explain the council is committed to ensuring sustainable levels of recreation in and around the Breckland SPA, and work with partners including Natural England, RSPB and Forestry Commission to develop a strategy that sets out an access management and monitoring programme that provides measures to prevent increasing visitor pressure, and suitable mitigation (should monitoring indicate that the Annex I species are failing to meet conservation objectives due to recreational pressure).
- Increased levels of recreational activity resulting in increased disturbance to Breckland SPA Annex I bird species (Stone Curlew, Nightjar, Woodlark).
- Increased levels of people on and around the heaths, resulting in an increase in urban effects such as increased fire risk, fly-tipping, trampling etc. The HRA recommended amendments to the Core Strategy ensuring the council commits to developing a framework of developer contributions, secured by legal agreement, for any new development where the heaths at Thetford (Barnham Cross Common, Thetford Heath, Thetford Golf Club and Marsh), East Wretham or Brettenham are likely to be used as local greenspace by the new residents of employees. Contributions would be used of implementation of an urban heaths management plan (an individual management plan will be produced for Barnham Cross Common), with the primary purpose of achieving SPA/SAC conservation objectives.
- Increased levels of recreation to the Norfolk Coast (including the Wash), potentially resulting in disturbance to interest features to interest features and other recreational impacts. The HRA suggested supporting text of the Core Strategy should recognise that coastal competent authorities promoting visitor access will need to consider the necessary measures required to meet the requirement of the Habitats Regulations and protect the integrity of the coastal European sites, and the possibility that additional housing within the Breckland District may contribute to that visitor pressure, in-combination with new housing in other districts. The text should therefore commit to working in partnership with neighbouring authorities and other relevant partners to prevent adverse effects when monitoring indicates it could occur.
- Increased water abstraction requirements to meet the additional water supply needs. The HRA suggested that amendments to the Core Strategy should include the requirement for all new developments to install infiltration and attenuation measures to dispose of surface water in accordance with recommended SUDS and any inadequate waste water infrastructure serving new development should be upgraded as required and operational in time to meet the demands of development. Further action was also recommended in order to seek confirmation from the Environment Agency and/or AWS that existing capacity and available headroom in existing sewage systems is adequate to absorb additional discharges from new development, or that upgraded infrastructure is planned and fully committed to within the Core Strategy period.
- Water quality and waste water discharge – The HRA recommended amendments to the housing

Breckland Core Strategy (adopted 2009)
figures within the Core Strategy so that they are taken forward in three categories i.e. those immediately provided for in the plan, those that can only be taken forward with the committed works in place and operational in time to meet the demands of development, and those that cannot be taken forward prior to plan review and the revisit of the HRA. Further action to seek the necessary information from the Environment and/or AWS and the consultants commissioned to produce the Breckland Water Cycle Study to enable housing currently promoted to be taken forward under the three categories. • Increased levels of traffic generated air pollution affecting sensitive features of SAC habitats. The HRA suggested that the Core Strategy was amended to commit to the prevention of road infrastructure improvements or new roads within 200m of the SAC. • Potential reduction in the density of Habitats Directive Annex I bird species associated with the SPA, due to avoidance of areas close to new roads. The amendments to the Core Strategy suggested in the HRA include the commitment to the prevention of road infrastructure improvements or new roads within 1500m of Breckland SPA/supporting habitat. In conclusion, the findings of the appropriate assessment and consideration of potential mitigation measures, the direct effects of buildings and road development, the indirect disturbance to Annex 1 birds, the effects of urbanisation and recreational pressure on the north Norfolk Coast, can all be mitigated for with the application of the avoidance/mitigation measures proposed and no further assessment is required. Also, Breckland District Council confirmed road infrastructure requirements proposed in the Core Strategy for Thetford would be focussed on the A11 only as the 1500m buffer zone would prevent any options for road improvements south and east of the town. Due to the effects of air pollution, road improvements within 200m of the Breckland SAC will also be avoided. In addition, it was concluded that further clarification and housing categorisation is required to determine if the impact of water demand, water treatment and discharge requirements, and ability of sewer systems to withstand flooding would not result in adverse effects upon European sites. It was noted that Breckland District Council would obtain necessary information from the Environment Agency and/or AWS and the consultants commissioned to produce the Breckland Water Cycle Study in order to take forward proposed measures. Any potential adverse effects upon the integrity of European sites have either been avoided or mitigated for.

Cambridgeshire and Peterborough Minerals and Waste Core Strategy (adopted 2011)	
Plan Owner/ Competent Authority: Cambridgeshire County Council and Peterborough City Council	
Related HRA/AA: Cambridgeshire and Peterborough Minerals& Waste LDF Habitats regulation Assessment: Full Assessment of the Core Strategy DPD Submission Plan.	
Summary of Plan proposals: The following strategic Objectives were identified for sustainable minerals development; • to contribute to the national, regional and local mineral supply by maintaining an adequate and steady supply of minerals and to meet local requirements at a rate sufficient to enable the delivery of the planned growth in Cambridgeshire and Peterborough • to provide for the creation and servicing of new sustainable communities and infrastructure in the plan area • to make allocations for new sand and gravel extraction in areas outside of the Ouse and Nene river valleys to safeguard the economic mineral resource of Cambridgeshire and Peterborough through the designation of Mineral Safeguarding Areas and Mineral Consultation Areas Vision • to minimise the use of virgin mineral by encouraging the efficient use of materials • to contribute to meeting strategic objectives relating to sustainable flood risk management for the Cranbrook and Counter Drain catchment, and enhancement habitat creation adjacent to the Ouse Washes • to maximise biodiversity and community benefits including additional green infrastructure • to encourage operational practices and restoration proposals which minimise or help to address climate change • to identify planning policy criteria by which to assess mineral proposals, ensure effective planning control and the appropriate location of mineral extraction • to safeguard and enhance the distinct landscapes of Cambridgeshire and Peterborough including the wet fens, river valleys, chalk and limestone uplands • to protect and enhance the biodiversity and historic environment, including designated sites, of Cambridgeshire and Peterborough	

Cambridgeshire and Peterborough Minerals and Waste Core Strategy (adopted 2011)

- to protect the ground and surface water resources of Cambridgeshire and Peterborough
- to safeguard the residential amenity of new and existing communities in Cambridgeshire and Peterborough
- to ensure that potential emissions are minimised as part of minerals development
- to ensure high quality in terms of design and operation of mineral operations in Cambridgeshire and Peterborough
- to encourage and safeguard sustainable transport of minerals e.g. by rail and water
- to ensure the sustainable use of soils in Cambridgeshire and Peterborough

The following strategic Objectives were identified for sustainable waste development;

- to ensure suitable provision is made through site specific allocations for sustainable waste facilities to manage the waste of Cambridgeshire and Peterborough, London or adjoining authorities
- to develop a network of waste management facilities which will be located having regard to climate change, and key factors including the location and amount of waste arising, and minimising the of movement of waste
- to contribute to ensuring self-sufficiency of the wider area in the management of waste, and to seek self-sufficiency within the Plan area where practical and in accordance with the proximate management of waste
- to ensure that all major new developments undertake sustainable waste management practices
- to use construction and demolition waste in the creation of strategic new enhancement habitat for the internationally important Ouse Washes
- to identify planning policy criteria by which to assess waste development proposals
- to encourage waste management practices which do not incur unacceptable adverse impact on the local and global environment or endanger human health in Cambridgeshire and Peterborough
- to encourage waste management practices which minimise, counter (through off-set arrangements), or eliminate contributions to climate change, including the minimisation of greenhouse gases
- to ensure that waste management sites are resilient to the impacts of climate change at the local level
- to ensure high quality of design and operation of waste management facilities in Cambridgeshire and Peterborough
- to encourage sustainable transport of waste by alternative means e.g. rail and water
- to protect the ground and surface water resources of Cambridgeshire and Peterborough
- to safeguard and enhance the distinct landscapes of Cambridgeshire and Peterborough including the wet fens, river valleys, chalk and limestone uplands
- to protect and enhance the biodiversity and historic environment, including designated sites, of Cambridgeshire and Peterborough
- to safeguard the residential amenity of new and existing communities in Cambridgeshire and Peterborough
- to allow scope for new technology and innovation in waste management in the Plan area e.g. exemplar projects in handling and processing of waste
- to determine waste planning applications in the light of the principles for sustainable waste management and the waste hierarchy to ensure the sustainable use of soils
- to safeguard waste management sites from incompatible development that may prejudice the waste use, through the designation of Waste Consultation Areas

Conclusions on potential effects of relevance to European sites within scope of HRA of Forest Heath Local Plan

The assessment of each of the minerals and waste policies found that for all proposed policies in the Core Strategy DPD submission Plan no adverse impacts were identified on European or Ramsar sites that cannot be avoided by legally enforceable measures. The assessment of the minerals and waste strategic allocations in the core strategy DPD submission Plan (Block Fen/ Longwood Fen and Addenbrookes) alone and in combination found that no adverse impacts were identified on European or Ramsar sites that cannot legally be avoided by legally enforceable measures.

Cambridgeshire Local Transport Plan 2011-2031 (adopted 2015)	
Plan Owner/ Competent Authority: Cambridgeshire County Council	
Related HRA/AA: HRA Stage 1 – Screening, October 2014	

Summary of Plan proposals:

The key objectives identified within the Local transport Plan were

- Enabling people to thrive, achieve their potential and improve their quality of life.
- Supporting and protecting vulnerable people.
- Managing and delivering the growth and development of sustainable communities.
- Promoting improved skill levels and economic prosperity across the county, helping people into jobs and encouraging enterprise.
- Meeting the challenges of climate change and enhancing the natural environment.

Conclusions on potential effects of relevance to European sites within scope of HRA of Forest Heath Local Plan

- The international sites are not likely to be affected by changes to air pollution due to their distance from the schemes or the nature of the schemes
- Significant effects from changes to hydrology are unlikely because the international sites are either not hydrologically linked to any of the proposed schemes, because they are sufficient distance from any of the schemes or because of the small scale nature of the schemes
- The schemes and strategies within the Plan will not lead to habitat loss within any of the international sites
- The schemes and strategies within the Plan will not lead to habitat loss outside of any of the international sites that could be considered of functional importance to those sites and associated qualifying populations of animals
- Significant effects from disturbance and recreation are not likely at any of the international sites either because of the distance of the sites from the schemes or, where sites lie closer to schemes, recreational effects and other types of disturbance are not listed as vulnerabilities of the site.
- To conclude, the findings of the HRA Screening are that none of the schemes, interventions or strategies contained within the LTP3 will result in likely significant effects on any of the international sites included within this assessment.

St Edmundsbury Core Strategy (adopted 2010)	
Plan Owner/ Competent Authority: St Edmundsbury Council	
Related HRA/AA: St Edmundsbury Core Strategy Habitats Regulations Assessment: Screening September 2010	

Summary of Plan proposals:

Housing provision: The Core Strategy makes provision for at least 15,631 new homes within the plan period between 2008 and 2031 (Policy CS1).

Employment land provision: Policy CS9 of the Core Strategy provides for development to support at least 13,000 additional jobs in the borough by 2026.

Conclusions on potential effects of relevance to European sites within scope of HRA of Forest Heath Local Plan

The HRA concluded that four of the fifteen policies in the Core Strategy would lead to development in the long term; Policies CS1 - St Edmundsbury Spatial Strategy, CS9 - Employment and the Local Economy, CS11 - Bury St Edmunds Strategic Growth and CS12 - Haverhill Strategic Growth.

A potential for significant effects on Breckland SAC/SPA was identified through increased levels of recreational activity, possibly leading to higher levels of disturbance to Breckland SPA Annex I bird species (stone curlew, nightjar and woodlark) and possible degradation of Annex I habitats within Breckland SAC (e.g. through increased levels of trampling and littering).

It identified that the Plan seeks to protect international sites through Policy CS2 (also recognised in Policy CS1). Policy CS2 puts in place a 1.5 km buffer zone around Breckland SPA for Stone Curlew and a 400 m buffer zone for Woodlark and Nightjar. It also puts in place a 1.5 km buffer zone around areas outside of the SPA which have supported five or more nesting attempts by Stone Curlew since 1995 and as such act

St Edmundsbury Core Strategy (adopted 2010)

as supporting Stone Curlew habitat. In these areas development may be only take place for the re-use of existing buildings and for development which will be completely masked from the SPA by existing development or provided it is demonstrated by an Appropriate Assessment that the development will not adversely affect the integrity of the SPA.

The HRA also made reference to the lower tier Development Plan Documents (DPDs) that will arise from Policies CS1, CS9, CS11 and CS12 including Bury St Edmunds Area Action Plan (AAP), Haverhill AAP and Site Allocations DPDs (including Rural Allocation Sites and the Gypsy and Travellers sites) which will include specific details about the locations of future growth, including the exact location of allocations sites and their proposed land uses. The Plan commits to an HRA being carried out at the development control stage/lower tier development plan stage for any development arising out of these policies. If it cannot be proven that there will no significant impacts on the international sites and/or it is not possible to mitigate/compensate for these impacts the development will not be included in the lower tier plans and/or be granted planning permission.

The assessment concluded that there will be no likely significant effects due to the proposals for development outlined in Policies CS1, CS9, CS11 and CS12 or from any of the other policies included in the Plan. It also concluded that there is no potential for in combination effects as no other current plans or projects that are likely to lead to significant effects on the Breckland SAC/SPA or the Waveney and Little Ouse Valley Fens SAC have been identified, or where impacts have been identified they have been adequately mitigated.

St Edmundsbury Vision 2031 Local Plan Documents (adopted 2014)

Plan Owner/ Competent Authority: St Edmundsbury Borough Council

Related HRA/AA: St Edmundsbury Vision 2031 HRA Screening documents

Summary of Plan proposals:

Site allocation documents for Bury St Edmunds, Haverhill, and the Rural Area.

Conclusions on potential effects of relevance to European sites within scope of HRA of Forest Heath Local Plan

Bury St Edmunds: HRA Screening concludes that St Edmundsbury's Core Strategy underwent Appropriate Assessment, and was found to be sound following an Examination in Public. The Bury St Edmunds Vision 2031 Local Plan Document adds further detail, but does not increase the amount of development planned for the Bury St Edmunds area. The cumulative effect of all development has already been assessed through the Core Strategy process and does not require further assessment.

Haverhill: HRA Screening concluded that each individual site allocation or policy within the St Edmundsbury Borough Council Haverhill Vision 2031 Local Plan Document is not likely to have a significant effect on any European site, and that no individual site appropriate assessment is necessary. The scale of the allocations, and their location in relation to European sites, means that no in combination effects of individual allocations or policies occur. Concluded that the Haverhill Vision 2031 Local Plan Document would have no likely significant effect on any European site.

Rural Area: HRA Screening concludes that St Edmundsbury's Core Strategy underwent Appropriate Assessment, and was found to be sound following an Examination in Public. The Rural Vision 2031 Local Plan Document adds further detail, but generally does not increase the amount of development planned for the Rural area. The cumulative effect of all development in the Core Strategy has already been assessed and does not require further assessment. Policy RV6 'Ingham' adds a new development of leisure and recreational facilities not described in the Core Strategy. This new development on balance is likely to reduce visitor pressure on European sites and does not add an in combination negative effect upon any European site.

East Cambridgeshire Local Plan (adopted 2015)

Plan Owner/ Competent Authority: East Cambridgeshire District Council

Related HRA/AA: Habitats Directive Assessment Screening Document - updated (July 2013)

Summary of Plan proposals:

Housing provision: The Local Plan makes provision for an agreed target of 11,500 dwellings for East Cambridgeshire which represents an annual rate of 575 dwellings per year during the period 2011-2031.

East Cambridgeshire Local Plan (adopted 2015)

Employment land provision: The Local Plan aims to maximise opportunities for jobs growth in the district, with the aim of achieving a minimum of 9,200 additional jobs in East Cambridgeshire. Part of this strategy will involve making provision for a deliverable supply of at least 179 ha of employment land for B1/B2/B8 uses, and providing for home working.

Conclusions on potential effects of relevance to European sites within scope of HRA of Forest Heath Local Plan

The following generic vulnerabilities categories were used to assess the likely effects of the Local Plan:

- Physical Habitat Loss – land take by developments
- Physical Damage – from on-site or off-site activities e.g. change in land management, natural erosion, water abstraction, recreational pressure
- Disturbance – e.g. noise from recreation, industry or transport
- Water Quantity – changes in water quantity due to abstraction
- Contamination / Pollution – water pollution, air pollution, water quality

It was determined that Devil's Dyke is vulnerable to disturbance and contamination/pollution; both Chippenham Fen and Wicken fen are vulnerable to physical habitat loss, physical damage and water quantity; and Ouse Washes and Breckland are both vulnerable to physical habitat loss, physical damage, disturbance and water quantity.

It was concluded that the Local Plan, alone or in combination with other plans and projects, is unlikely to have any significant effects on any of the European sites.

King's Lynn and West Norfolk Core Strategy (adopted 2011)

Plan Owner/ Competent Authority: Borough Council of King's Lynn and West Norfolk

Related HRA/AA: King's Lynn and West Norfolk Borough Council's Core Strategy Regulation 25: Local Development Framework Habitats Regulations (Appropriate Assessment) Report - updated (November 2010)

Summary of Plan proposals:

Housing provision: Policy CS01 of the Core Strategy states the plan will identify sufficient land for a minimum of 16,500 new dwellings across the Borough over the period 2001 to 2026: a minimum of 7,510 new dwellings through the regeneration of brownfield land and urban expansion in King's Lynn, at least 2,710 new homes with new allocations of at least 390 house in Downham Market, at least 580 new homes with new allocations of at least 220 dwellings in Hunstanton, considers the provision of at least 550 new dwellings to the east of the town in the area adjacent to Wisbech and makes provision for at least 2,880 new homes within or adjacent to selected Key Rural Service Centres (to be defined in the Site Specific Allocations DPD) in rural and coastal areas.

Employment land provision: Policy CS10 of the Core Strategy aims to facilitate job growth in the local economy, delivering the RSS target of 5,000 additional jobs by 2021 through the provision of employment land as well as policies for tourism, leisure, retail and the rural economy.

Conclusions on potential effects of relevance to European sites within scope of HRA of Forest Heath Local Plan

- Breckland SPA

Possible Mechanism(s):

- Direct Impacts – Proximity And Disturbance.

  Affected Policies: CS01 Housing And Jobs, CS02 The Settlement Hierarchy, CS06 Development in Rural Areas and CS09 Housing Distribution

  The HRA suggested the policy is amended to policy take into account disturbance/displacement to Stone Curlews around Breckland SPA, in line with the approach taken by neighbouring local authorities.

  New built development will be restricted within 1500m of the Breckland SPA. Development will be restricted to the re-use of existing buildings or where existing development completely masks the new proposal from Breckland SPA. Beyond the SPA, a 1500m buffer will be applied to areas where

King's Lynn and West Norfolk Core Strategy (adopted 2011)

the qualifying features are known to exist, or where nesting attempts have been made. In this area, development may be acceptable where suitable alternative habitat (outside the SPA) can be secured.

- Indirect impacts - recreation (Woodlark and Nightjar).

  Affected policies: CS1 Housing And Jobs, CS2 Settlement Hierarchy, CS06 Development in Rural Areas, C09 Housing Distribution and C10 The Economy

  The HRA suggested the Core Strategy should be amended to stress a partnership approach to recreation management in the SPA.

  It also recommended the inclusion of policy wording or supporting text to explain that the council is committed to ensuring sustainable levels of recreation in and around the Breckland SPA, and work with partners including Natural England, RSPB and Forestry Commission to develop a strategy that sets out an access management and monitoring programme that provides measures to prevent increasing visitor pressure.

  Suitable mitigation to be installed should monitoring indicate that the Annex1 species are failing to meet conservation objectives due to recreational pressure.

- North Norfolk Coast SPA/Ramsar;

Possible Mechanism(s):

- Recreational disturbance impacts to SPA species, especially Ringed Plover and Little Tern.

  Affected policies: CS01 Housing And Jobs, CS02 The Settlement Hierarchy, CS07 Development in Coastal Areas, CS09 Housing Distribution, CS13 Community & Culture.

  The HRA suggested core strategy document could be modified to stress a partnership approach to recreation management in the SPA. It recommended that supporting text should be added that recognises that coastal competent authorities promoting visitor access will need to consider the necessary measures required to meet the requirements of the Habitats Regulations and protect the integrity of the coastal European sites, and that it is possible that additional housing within the Borough may contribute to that visitor pressure, in combination with new housing in other districts. The text should therefore commit to working in partnership with neighbouring authorities and other relevant partners to prevent adverse effects when monitoring indicates it could occur.

The assessment concluded that the amendments to the Core Strategy satisfactorily address the issues raised, and as a result the above policies will not adversely affect the integrity of the European Sites.

King's Lynn and West Norfolk Site Allocations and Development Management Policies (submitted 2015)

Plan Owner / Competent Authority: Borough Council of King's Lynn and West Norfolk	
Related HRA / AA: HRA of Proposed Submission document (September 2014)	

Summary of Plan proposals:

Site allocations and DM policies.

Conclusions on potential effects of relevance to European sites within scope of HRA of Forest Heath Local Plan

HRA Screening was unable to rule out likely significant effects on:

- North Norfolk Coast SPA and Ramsar site – combined effects of recreation pressure on designated birds from new housing within and outside of the borough.
- The Wash SPA and Ramsar site – combined effects of recreation pressure on designated birds from new housing within and outside of the borough.
- The Wash and North Norfolk Coast SAC - combined effects of recreation pressure on designated habitats from new housing within and outside of the borough.

In parallel to continued commitment to deliver a package of habitat protection measures specified by HRA of the Core Strategy, Appropriate Assessment of the Sites and DM Policies document required policy modifications to ensure the provision of green infrastructure plus a programme of permanent publicity aimed at occupants of the development and other residents highlighting the opportunities for recreation (especially dog-walking) in the vicinity, avoiding areas within the European sites. This was judged likely to reduce

King's Lynn and West Norfolk Site Allocations and Development Management Policies (submitted 2015)

impacts to an insignificant level and avoid adverse effects on integrity but should be tested via project level HRA Screening for larger proposals. A joint monitoring programme with adjoining district of North Norfolk was also recommended.

South Cambridgeshire Local Plan 2011-2031 (submitted 2014)

Plan Owner / Competent Authority: South Cambridgeshire District Council

Related HRA / AA: South Cambridgeshire Local Plan Submission Habitats Regulations Assessment Screening Report (March 2014)

Summary of Plan proposals:

Housing provision: The Local Plan makes provision for 19,000 new homes, including affordable housing and 85 Gypsy & Traveller pitches.

Employment land provision: The Local Plan makes provision for 22,000 additional jobs to support the Cambridge Cluster and provide a diverse range of local jobs.

Conclusions on potential effects of relevance to European sites within scope of HRA of Forest Heath Local Plan

The following possible effect were identified;

- Ouse Washes – additional sewerage discharge, additional flow in sewerage drain network
- Breckland SAC/SPA – impacts on groundwater-dependent terrestrial ecosystems (GWDYE) and the species they support
- Devils Dyke - recreation; additional visitor pressure resulting in trampling and changes to vegetation structure
- Fenland – recreation; additional visitor pressure resulting in trampling and changes to vegetation structure, additional sewage discharge, impacts on water availability
- Portholme SAC – changes in water level and water quality

There are unlikely to be significant effects on the identified European sites as a consequence of the policies and allocations as worded in the South Cambridgeshire Local Plan Submission. Therefore no policies require advancement to appropriate assessment. The plan is unlikely to have significant effects on the identified European sites when considered in combination with other plans and projects.

- **Suffolk Minerals Core Strategy DPD** (adopted 2008)

Plan Owner / Competent Authority: Suffolk County Council

Related HRA / AA: Suffolk Minerals Core Strategy Appropriate Assessment of Potential Impacts of Minerals Policies on Natura 2000 Sites (September 2007)

Summary of Plan proposals:

The key objectives identified within the minerals Core Strategy were:

- to ensure, so far as practicable, the prudent, efficient and sustainable use of minerals and recycling of suitable materials, thereby minimising the requirement for new primary extraction;
- to conserve mineral resources through appropriate domestic provision and timing of supply;
- to safeguard mineral resources as far as possible;
- to prevent or minimise production of mineral waste;
- to secure working practices which prevent or reduce as far as possible, impacts on the environment and human health arising from the extraction, processing, management or transportation of minerals;
- to protect internationally and nationally designated areas of landscape value and nature conservation importance from minerals development, other than in the exceptional circumstances detailed in paragraph 14 of this statement;

- **Suffolk Minerals Core Strategy DPD** (adopted 2008)

- to secure adequate and steady supplies of minerals needed by society and the economy within the limits set by the environment, assessed through sustainability appraisal, without irreversible damage;
- to maximise the benefits and minimise the impacts of minerals operations over their full life cycle;
- to promote the sustainable transport of minerals by rail, sea or inland waterways;
- to protect and seek to enhance the overall quality of the environment once extraction has ceased, through high standards of restoration, and to safeguard the long-term potential of land for a wide range of after-uses;
- to secure closer integration of minerals planning policy with national policy on sustainable construction and waste management and other applicable environmental protection legislation; and
- to encourage the use of high quality materials for the purposes for which they are most suitable.

Conclusions on potential effects of relevance to European sites within scope of HRA of Forest Heath Local Plan

The following potential sources of impact to the Natura 2000 sites that may arise from the construction or operation of these types of facility were identified within the assessment:

- Physical disturbance of sites;
- Flooding & water quality, including extraction below the water table;
- Noise from road traffic and operation of the plants;
- Air emissions from road traffic (including dust); and
- Human presence.

The assessment concluded that physical disturbance of Natura 2000 sites for the purposes of mineral extraction would not normally be acceptable. However, given that minerals development is only a temporary use of land, restoration to a very high standard, with net environmental and biodiversity gains, may mean that some development could be acceptable. Any increase in flooding caused by new mineral sites will be unlikely to be acceptable to the Environment Agency. Similarly, a decline in water quality is also likely to be unacceptable, so there should not be any adverse impacts on water-dependent SPAs and SACs in Suffolk. The assessment determined that appropriately mitigated, noise from road traffic, operation of the plants and minerals developments is unlikely to have a material adverse impact on any Natura 2000 sites. Also, disturbance to Natura 2000 sites through human presence on minerals sites is only likely to be a factor where the minerals sites are located in, or very close to, the Natura 2000 site. Policy 3: Cumulative environmental impacts and phasing of mineral workings, Policy DC2: Protection of regionally and locally recognised sites of ecological and geological interest and promotion of biodiversity and protection of priority habitats, Policy DC5: Public rights of way and Policy DC8: Progressive working and restoration would mitigate the adverse impacts of disturbance caused by humans.

In conclusion, the Minerals Core Strategy aims to have a positive impact on biodiversity in the long term through appropriate restoration schemes and beneficial after-uses. For example, the creation of new wetland habitat could go towards meeting the County's Priority Habitat Action Plan targets of at least 445 ha of new reed-bed by 2023 and the creation of new wet woodlands.

- **Suffolk Waste Core Strategy DPD** (adopted 2011)

Plan Owner / Competent Authority: Suffolk County Council

Related HRA / AA: Habitats Regulations Assessment : Suffolk County Council Waste Core Strategy (Minerals & Waste Development Framework); March 2010

Summary of Plan proposals:

The key objectives identified within the waste Core Strategy were:

- To provide policies and identify locations for the management of the quantities of waste apportioned to Suffolk through the East of England Plan.
- To facilitate sustainable waste management by minimising waste as a priority and encouraging communities to take responsibility for the waste they produce through better education via public consultation.
- To facilitate the efficient transportation of waste throughout Suffolk.
- To facilitate the driving of waste up the hierarchy through the provision of sufficient suitable waste management facilities for waste recycling, composting and transfer.

- **Suffolk Waste Core Strategy DPD** (adopted 2011)

- To facilitate equality of public access to Household Waste Recycling Centres.
- To encourage waste management facilities and practices that do not endanger human health and to ensure that adverse impacts on residential amenity and the quality of life can be prevented or suitably mitigated.
- To minimise adverse impacts on air quality.
- To minimise adverse impacts on landscape quality and the built and historic environment.
- To minimise adverse ecological and geological/geomorphological impacts, and to encourage opportunities for restoration, creation and enhancement of wildlife habitats.
- To minimise adverse impacts on water quality.

To facilitate proposals and encourage waste management practices that reduce the effects of the emissions of greenhouse gases and deliver renewable energy production where feasible and appropriate and mitigate against the impacts of climate change.

Conclusions on potential effects of relevance to European sites within scope of HRA of Forest Heath Local Plan

The policies within the Waste Core Strategy can achieve their aims and objectives and not result in any significant impacts either alone or in combination upon any features of European Interest on any Natura 2000 Site in Suffolk or the neighbouring Counties. Because of Suffolk County Council's commitments to the conservation of Biodiversity and the explicit Objectives 9 and 10 in the Waste Core Strategy: "To minimise adverse ecological and geological/geomorphological impacts and to encourage opportunities for restoration, creation and enhancement of wildlife habitats" and "To minimise adverse impacts upon water quality" together with an on-going consultation process with the National nature conservation body (Natural England), it is considered that that any possible negative effects on the integrity of European Sites as a result of the policies within this Waste Core Strategy will be considered, mitigation sought and compensation agreed in order to reduce or negate any negative impacts.

- **Suffolk Local Transport Plan 2011-2031**

Plan Owner/ Competent Authority: Suffolk County Council

Related HRA/AA: Regulation 61 Assessment for Suffolk Local Transport Plan 3

Summary of Plan proposals:

The plan includes a the delivery of a number of strategic transport improvements including:

- dualling of the A11 between Barton Mills and Thetford
- the Ipswich major scheme, 'Ipswich- Transport fit for the 21st Century'
- the Beccles rail loop allowing increased frequency of trains between Ipswich and Lowestoft
- the Beccles southern relief road
- the Lowestoft northern spine road to help remove through traffic from the town
- Ipswich rail chord to improve freight connections from Felixstowe
- Copdock A14/A12 junction improvements.

Conclusions on potential effects of relevance to European sites within scope of HRA of Forest Heath Local Plan

The matters of concern for each of the relevant European sites include:

- Breckland SPA – impacts on internationally important populations of Stone-curlew, Woodlark and Nightjar and disturbance of these Annex 1 birds
- Breckland SAC – impacts on habitats of internationally important populations of Stone-curlew, Woodlark and Nightjar and disturbance of these Annex 1 birds

The conclusion of the assessment of the draft LTP3 was that it would have a likely significant effect, alone or in combination with other plans and projects. The only scheme identified as having potential to lead to a significant effect (habitat loss, disturbance and pollution) on a European site was the Brandon relief road LTP3 scheme. In order to remove any likely significant effect on the conservation objectives of Breckland SPA, a project level HRA would be required for the Brandon Relief Road at the design stage. For Natural England to approve such a document, adequate mitigation would need to be sought and compensation agreed in order to reduce or negate any negative impacts. As a result of the HRA, revisions to the LTP3 were made to avoid likely significant effects on any European Sites before it was adopted by SCC. The re-assessment concluded

• **Suffolk Local Transport Plan 2011-2031**
that the direct effect of road improvements and the indirect effect of disturbance to Annex I bird could be mitigated for with the application of the avoidance/mitigation measures proposed (a detailed package of mitigation and monitoring measures to ensure the LTP schemes do not result in impacts on European sites were to be considered at the project level).

Major infrastructure projects[9]

No relevant projects identified.

Other relevant projects

Planning consent has been sought from FHDC or a pre-application EIA Scoping request consulted on for a number of developments within the District which have not yet been developed and which are not included as preferred options in the SALP but which are large enough to present a credible risk that they might have significant effects in-combination with the SIR.

Each of the projects and any associated project level HRA have been reviewed for its potential to have significant effects on European sites in combination with the SIR, following the methodology described in Chapters 3 and 4.

[9] National Infrastructure Planning website http://infrastructure.planningportal.gov.uk/

FHDC Local Plan ref.	Planning application / EIA Scoping Request ref.	Site address	Outline of current proposal	Is site in a location requiring project level HRA under Core Strategy Policy CS2?	Project level HRA findings reported by FHDC and significance for the in-combination assessment
B17	DC/15/1072/OUT	Land to West of Brandon	Residential / mixed use	Yes – site is within the 1,500 m Stone Curlew constraint zone and the 400 m Woodlark / Nightjar constraint zone for Breckland SPA	On the basis of information provided to date by the applicant, project level HRA Screening has been unable to screen out likely significant effects. Project level Appropriate Assessment will need to consider potential for in-combination effects, including with the SIR and SALP if they have reached draft plan/proposed submission stage.
L15	DC/14/2042/OUT	Land North Of Broom Road, Covey Way And Maids Cross Hill, Lakenheath	132 dwellings.	No but project level HRA has been carried out in any case.	On the basis of information provided to date by the applicant, project level HRA Screening has been unable to screen out likely significant effects. Project level Appropriate Assessment will need to consider potential for in-combination effects, including with the SIR and SALP if they have reached draft plan/proposed submission stage.
L22	DC/14/2073/FUL	Land Adjacent 34 Broom Road, Lakenheath	147 dwellings, associated access, landscaping and open space.	No but project level HRA has been carried out in any case.	On the basis of information provided to date by the applicant, project level HRA Screening has been unable to screen out likely significant effects. Project level Appropriate Assessment will need to consider potential for in-combination effects, including with the SIR and SALP if they have reached draft plan/proposed submission stage.
K02	DC/14/0585/OUT – refused and appeal submitted June 2015	Meddler Stud, Kentford	20-box racehorse training establishment (with trainer's house) and up to 63 dwellings with access and open space.	Yes – site is within the 1,500 m Stone Curlew constraint zone for Breckland SPA.	Project level HRA Screening has ruled out likely significant effects. Project level HRA Screening did not highlight any minor effects and noted that the total number of dwellings being considered in Kentford or recently approved but not started was well within the scale of development provided for

FHDC Local Plan ref.	Planning application / EIA Scoping Request ref.	Site address	Outline of current proposal	Is site in a location requiring project level HRA under Core Strategy Policy CS2?	Project level HRA findings reported by FHDC and significance for the in-combination assessment
					by the Core Strategy.
N/A	DC/15/1050/EIASCO	Land at Little Eriswell Road from A1065 to Norfolk county boundary, Eriswell	Scoping Opinion Under Environmental Impact Assessment Regulations 2011 - Proposed development on site area over 5 ha including residential dwelling houses alongside the provision of a primary school, allotments, play space for sports and other green spaces.	Yes – site is within the 1,500 m Stone Curlew constraint zone for Breckland SPA.	Project level HRA Screening not yet been carried out. Not considered further by in-combination assessment due to insufficient information at this stage. Project level HRA Screening will need to consider potential for in-combination effects, including with the SIR and SALP if they have reached draft plan/proposed submission stage.
N/A	DC/16/0235/EIASCO	New Gallops, Hamilton Road, Newmarket	Scoping opinion under Environmental Impact Regulations 2011 - Regulation 13(1) - Proposed redevelopment of the new gallop north west of Newmarket.	No.	Project level HRA not yet been carried out. Not considered further by in-combination assessment due to insufficient information at this stage. Project level HRA Screening will need to consider potential for in-combination effects, including with the SIR and SALP if they have reached draft plan/proposed submission stage.

Appendix 2
European sites information

Site	Summary of reasons for designation	European site pressures and threats	Conservation Objectives	Other notes
Breckland SPA Low rainfall and free-draining soils led to the development of dry heath and grassland communities. Much of Breckland was planted with conifers through the 20th century, and elsewhere arable farming is the predominant land use. The remnants of dry heath and grassland that have survived these changes support heathland-breeding birds, where grazing by sheep and rabbits is sufficiently intensive to create short turf and open ground. These species have also adapted to live in forestry and arable habitats. Component SSSIs within Forest Heath are listed below.	Article 4.1, Annex I species: Breeding populations of Stone Curlew (60.1% GB breeding population), Nightjar (12.2% GB breeding population) and Woodlark (28.7% GB breeding population).	**Current pressures** Lack of ground disturbance, under-grazing and inappropriate scrub and weed control. Planning permission: general – development, especially for housing, roads and solar farms. **Potential future threats** Inappropriate forestry and woodland management. Stone Curlew monitoring and intervention – vulnerability of nests and chicks to farming operations. Air pollution: impact of atmospheric nitrogen deposition. Public access / disturbance – does not appear to be currently significantly affecting bird populations but impacts of increased recreational activities uncertain. Climate change. Inappropriate pest control – predation on ground-nesting SPA birds.	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring: • The extent and distribution of the habitats of the qualifying features; • The structure and function of the habitats of the qualifying features; • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features; and • The distribution of the qualifying features within the site.	None.
Breckland SAC Component SSSIs within Forest Heath are listed below.	Annex I habitats: inland dunes with open *Corynephorus* and *Agrostis* grasslands; natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation;	**Current pressures** Lack of ground disturbance, undergrazing, inappropriate scrub and weed control, inappropriate cutting/mowing.	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its	Inland dunes with open Corynephorus and Agrostis grasslands for which this is the only known outstanding locality in the UK and is considered to be rare as its total extent is estimate to be less than 1,000

Site	Summary of reasons for designation	European site pressures and threats	Conservation Objectives	Other notes
	European dry heaths; semi-natural dry grasslands and scrubland facies on calcareous substrates; alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*. Annex II species: Great Crested Newts *Triturus cristatus*.	Water pollution. Changes in species distributions. **Potential future threats** Air pollution: impact of atmospheric nitrogen deposition. Public access / disturbance – SAC features may be affected through eutrophication (dog fouling, unauthorised fires) and disturbance of soils. Climate change. Habitat fragmentation.	Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats and habitats of qualifying species; • The structure and function (including typical species) of qualifying natural habitats; • The structure and function of the habitats of qualifying species; • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely; • The populations of qualifying species; and, • The distribution of qualifying species within the site.	hectares.
Rex Graham Reserve SAC This is a disused chalk pit with developing dry grassland characterised by false oat-grass *Arrhenatherum elatius*. The site has been selected as it supports the largest population of military orchid *Orchis militaris* in the UK, comprising more than 95% of the current total population.	Annex I habitats: Semi-natural dry grasslands and scrubland facies on calcareous substrates (important orchid sites)	**Current pressures** Changes in species distributions. **Potential future threats** Air pollution: risk of atmospheric nitrogen deposition – exceeds site-relevant critical load with risk of harmful effects. Habitat fragmentation. Deer. Invasive species. Public access / disturbance – ongoing threat to site features	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats; • The structure and function (including typical species) of	Managed by Suffolk Wildlife Trust

Site	Summary of reasons for designation	European site pressures and threats	Conservation Objectives	Other notes
		from illegal plant collection.	qualifying natural habitats; and • The supporting processes on which qualifying natural habitats rely.	
Devil's Dyke SAC (on FH boundary, part in FH and part in East Cambridgeshire DC) Devil's Dyke consists of a mosaic of CG3 *Bromus erectus* and CG5 *Bromus erectus – Brachypodium pinnatum* calcareous grasslands. It is the only known UK semi-natural dry grassland site for lizard orchid *Himantoglossum hircinum*.	Annex I habitats: Semi-natural dry grasslands and scrubland facies on calcareous substrates (important orchid sites)	**Current pressures** Inappropriate scrub control **Potential future threats** Air pollution: impact of atmospheric nitrogen deposition.	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring: • The extent and distribution of qualifying natural habitats; • The structure and function (including typical species) of qualifying natural habitats; and • The supporting processes on which qualifying natural habitats rely.	None.
Fenland SAC (outside FH) The Fenland SAC is comprised of three fenland Sites of Special Scientific Interest: Woodwalton Fen, Wicken Fen and Chippenham Fen. Each site generally consists of standing water bodies, ditch systems, bogs, marshes and broad-leaved woodland carr.	Annex I habitats: Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) Annex II species: Spined Loach (*Cobitis taenia*), Great Crested Newt (*Triturus cristatus*)	**Current pressures** Water pollution – nutrient enrichment of Chippenham Fen component, fed from a mixture of groundwater, rainfall and surface runoff. Hydrological changes related to public water supply abstraction. Air pollution: impact of atmospheric nitrogen deposition **Potential future threats** None identified.	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats and habitats of qualifying species; • The structure and function (including	National Trust undertaking remedial land management work.

Site	Summary of reasons for designation	European site pressures and threats	Conservation Objectives	Other notes
			typical species) of qualifying natural habitats; • The structure and function of the habitats of qualifying species; • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely; • The populations of qualifying species; and, The distribution of qualifying species within the site.	
Ouse Washes SAC, SPA and Ramsar site (outside FH) An extensive area of seasonally flooding wet grassland ('washland') with a diverse and rich ditch fauna and flora located on a major tributary of The Wash. The washlands support both breeding and wintering waterbirds.	<u>SAC qualifying species</u> Annex II: Spined loach *Cobitis taenia* <u>SPA qualifying species</u> Article 4.1, Annex 1 species (breeding season): Ruff *Philomachus pugnax;* Spotted Crake *Porzana porzana* Annex I species (over winter): Bewick's Swan *Cygnus columbianus bewickii*; Hen Harrier *Circus cyaneus*; Ruff *Philomachus pugnax*; Whooper Swan *Cygnus cygnus,* Article 4.2 (migratory species – breeding season): Black-tailed Godwit *Limosa limosa limosa*; Gadwall *Anas strepera*; Shoveler *Anas clypeata* Article 4.2 (migratory species –	**Current pressures** Inappropriate water levels. **Potential future threats** Water pollution.	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving… - the Favourable Conservation Status of its Qualifying Features (SAC), or - the aims of the Wild Birds Directive (SPA) …by maintaining or restoring: • The extent and distribution of the habitats of qualifying species/features • The structure and function of the habitats of the qualifying species/features • The supporting	Long term tidal strategy - regular problems summer flooding- severe siltation of Great Ouse River. Discharges into River Lark, River Little Ouse (and various other smaller watercourses in Forest Heath) could drain into Great Ouse River and to Ouse Washes SPA/SAC. Large land holdings by RSPB, Cambridgeshire Wildlife Trust and Wetlands and Wildfowl Trust.

Site	Summary of reasons for designation	European site pressures and threats	Conservation Objectives	Other notes
	over winter): Black-tailed Godwit *Limosa limosa islandica;* Gadwall *Anas strepera;* Pintail *Anas acuta;* Pochard *Aythya farina;* Shoveler *Anas clypeata;* Wigeon *Anas Penelope* Article 4.2 Assemblage qualification: regularly supports at least 20,000 waterfowl <u>Ramsar criteria</u> 1. Extensive area of seasonally-flooding washland 2. Nationally scarce aquatic plants, relict invertebrates, assemblage of nationally rare breeding waterfowl. 5. Bird assemblages of international importance. 6. Water birds for potential future consideration		processes on which the habitats of qualifying species/features rely • The populations of qualifying species/features, and, • The distribution of qualifying species/features within the site.	
The Wash SPA / Ramsar (outside FH) The largest estuarine system in the UK, fed by the rivers Witham, Welland, Nene and Great Ouse that drain much of the east Midlands of England. The Wash comprises very extensive saltmarshes, major intertidal banks of sand and mud, shallow waters and deep channels. The intertidal mudflats and saltmarshes represent one of Britain's most important winter feeding areas for waders and wildfowl outside of the breeding	<u>SPA qualifying species</u> Article 4.1, Annex 1 species (breeding season): Common Tern *Sterna hirundo*; Little Tern *Sterna albifrons*; Marsh Harrier *Circus aeruginosus* Article 4.1, Annex 1 species (over winter): Avocet *Recurvirostra avosetta*; Bar-tailed Godwit *Limosa lapponica*; Golden Plover *Pluvialis apricaria*, Whooper Swan *Cygnus cygnus* Article 4.2 (migratory): Ringed Plover Charadrius	**Current pressures** Inappropriate water level. Change in species distribution. **Potential future water threats** Public access/Disturbance – ongoing threat to site from recreational activities and low flying aircraft. Fisheries: Recreational marine and estuarine - potential to impact on fish stocks as a resource for designated birds. Inappropriate coastal	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring; • The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which	None.

Site	Summary of reasons for designation	European site pressures and threats	Conservation Objectives	Other notes
season. The saltmarsh and shingle communities are of considerable botanical interest and the mature saltmarsh is a valuable bird breeding zone. Also very important as a breeding ground for Common seals.	hiaticula; Sanderling Calidris alba; Black-tailed Godwit *Limosa limosa islandica*; Curlew *Numenius arquata*; Dark-bellied Brent Goose *Branta bernicla bernicla*; Dunlin *Calidris alpina alpine*; Grey Plover *Pluvialis squatarola*; Knot *Calidris canutus*; Oystercatcher *Haematopus ostralegus*; Pink-footed Goose *Anser brachyrhynchus*; Pintail *Anas acuta*; Redshank *Tringa tetanus*; Shelduck *Tadorna tadorna*; Turnstone *Arenaria interpres* Article 4.2 Assemblage qualification: regularly supports at least 20,000 waterfowl	management. Fisheries: Commercial and marine estuaries - risk to site features due to uncertainty of current management. Predation. Coastal squeeze.	the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.	
The Wash and North Norfolk Coast SAC (outside FH)	Annex I habitats: Sandbanks slightly covered by sea water all the time; mudflats and sandflats not covered by sea water at low tide; large shallow inlets and bays; reefs; *Salicornia* and other annuals colonising mud and sand; Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*); Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*); coastal lagoons. Annex II species: Common seal (*Phoca vitulina*); otter (*Lutra lutra*)	**Current pressures** Change in land management Air Pollution: impact of atmospheric nitrogen deposition **Potential future water threats** Public access/Disturbance – ongoing threat to site from recreational activities and low flying aircraft Siltation Fisheries: Recreational marine and estuarine - potential to impact on fish stocks as a resource for designated birds Invasive species Inappropriate coastal management Fisheries: Commercial and marine estuaries - risk to site	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which	None.

Site	Summary of reasons for designation	European site pressures and threats	Conservation Objectives	Other notes
		features due to uncertainty of current management. No restriction on harvesting methodology Coastal squeeze	qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and, The distribution of qualifying species within the site.	
Chippenham Fen Ramsar (outside FH)	Criterion 1: Spring-fed calcareous basin mire with a long history of management, which is partly reflected in the diversity of present-day vegetation. Criterion 2: The invertebrate fauna is very rich, partly due to its transitional position between Fenland and Breckland. The species list is very long, including many rare and scarce invertebrates characteristic of ancient fenland sites in Britain. Criterion 3: The site supports diverse vegetation types, rare and scarce plants. The site is the stronghold of Cambridge milk parsley (*Selinum carvifolia*).	Pressures and threats documented in the Fenland Site Improvement Plan relate to the designated features of the SAC (see above) but are also likely to be relevant to the designated Ramsar features, particularly hydrological changes which are cited in the Ramsar Information Sheet.	Not applicable.	Inappropriate scrub control, cutting and mowing in several units contributing to unfavourable no change status.
Wicken Fen Ramsar (outside FH)	Criterion 1: One of the most outstanding remnants of the East Anglian peat fens. The area is one of the few which has not been drained. Traditional management has created a mosaic of habitats from open water to sedge and litter fields. Criterion 2: The site supports one species of British Red Data Book plant, fen violet (*Viola persicifolia*), which survives at only two other sites in Britain. It also contains eight nationally scarce plants and 121 British Red Data Book invertebrates.	Pressures and threats documented in the Fenland Site Improvement Plan relate to the designated features of the SAC (see above) but are also likely to be relevant to the designated Ramsar features, particularly hydrological changes which are cited in the Ramsar Information Sheet.	Not applicable.	Issues caused by inappropriate water levels and scrub control in some areas. WLMP in place to address these issues.

Sources: Natural England's Site Improvement Plans for European sites and SSSI condition assessments (www.naturalengland.gov.uk) and JNCC's Natura 2000 Standard Data Forms and Ramsar Information Sheets (www.jncc.gov.uk), accessed 01/06/2015

Appendix 3

Consultation comments on the HRA of the ‘Issues and Options’ Core Strategy SIR

Consultee	**Summary of comment** (N.B. Section and page numbers refer to the HRA report at Issues and Options stage)	LUC response
Natural England	Natural England is broadly satisfied that the assessments have been prepared in accordance with the requirements of the Conservation (of Habitats and Species) Regulations (2010). We concur with the conclusion of the screening assessment that significant effects to European sites cannot be ruled out for either option, and agree with the conclusions of the housing distribution options screening matrix.	Noted.
Natural England	However we note there are some areas that are lacking detail or require clarification; we have therefore provided detailed advice below concerning the structure of the report and any further information that we consider necessary.	In light of the detailed issues raised by Natural England, the categorisation of types of potential effect and the screening assumptions set out at Issues and Options stage have been revised for the current stage of HRA through discussion and correspondence with Natural England.
Suffolk County Council	The development of a strategic approach to green infrastructure and ecological mitigation could, if implemented, assist in delivering housing and economic growth, with a planned and programmed approach to managing the cumulative pressures on habitats and species. The County Council is already working with authorities in East Suffolk to consider how to manage pressures on European sites. The same assistance can be provided to Forest Heath District Council (and neighbouring authorities) if helpful. In particular, improvements to the County Council's Rights of Way Network could be useful in managing recreational pressures.	Noted.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA para 2.9 and Table 2.2* Insufficient information included on reasons for designation, threats and reasons for adverse conditions of European sites.	European site information, in particular on pressures and threats, now reflects the latest information available in Natural England's Site Improvement Plans.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Para 3.3* Other plans which should have been included are the South Cambridgeshire Local Plan, the Cambridgeshire and Suffolk Waste and Minerals Plan and any transport plan for Cambridgeshire.	Review of other plans and projects has been extended in this HRA report.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Para 4.19* The condition restricting development '1500m of any 1 km grid which has supported 5 or more nesting attempts by Stone Curlew since 1995'. This condition potentially becomes more onerous as time progresses as more sites may be used for nesting. It should be taken for the last 10 years as was envisaged at the time when the 2009 HRA was in preparation. Further the use of a 1 km grid is excessively onerous. Nevertheless the need for Appropriate Assessment cannot be screened	The spatial data on Stone Curlew nesting attempts zone used to carry out this element of the HRA Screening at Issues and Options stage related to 1995-2006 and was the same as that used for the HRA of the Core Strategy. FHDC has commissioned a study to update this spatial data but the results were not available at the time of writing. It is recommended that they be used to inform HRA at the Proposed Submission stage of plan making. An appropriate period within which to nesting attempts data will be agreed with Natural England once the

Consultee	**Summary of comment** (N.B. Section and page numbers refer to the HRA report at Issues and Options stage)	LUC response
	out.	new data become available.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Para 4.49* No evidence has been put forward to reduce the constraint zone for disturbance from 10 km as recommended by Fearnley et al (2010) to 7.5 km; a distance of 10 km should be retained and an Appropriate Assessment undertaken with this in mind.	Disagree. The 10 km distance referred to by (Fearnley, et al., 2010) is measured from home postcodes to survey locations within Thetford Forest whilst the 7.5 km distance identified by analysis in the HRA of the Breckland Site Specific Policies and Proposals Document (Breckland District Council, 2010) is measured from home postcodes to the boundary o Thetford Forest. (Fearnley, et al., 2010) state that the two sets of findings are similar. See paragraphs 4.47 to 4.50 of this HRA report for further discussion.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Para 4.68 and following* Negative effects of urban development do not only affect Breckland sites and further consideration needs to be given to this topic.	Categorisation of effect types and the European sites that are vulnerable to each of these have been reassessed, informed by Natural England's Site Improvement Plans.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA para 4.90* The EA flood risk maps together with the site descriptions should help ascertain which sites might be affected by increased flooding. For example, Devil's Dyke is a raised chalk embankment and Rex Graham Reserve a chalk pit. This should be clarified to aid scoping.	A precautionary approach has been taken in identifying European sites potentially affected by water environment issues due to an absence of up to date, spatially specific information . The Council has commissioned an updated Water Cycle Study to inform the SIR and SALP and the HRA of these documents but the results of this study were not available at the time of writing; the issue will therefore be revisited at Proposed Submission (Regulation 19 consultation) stage.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Para 4.114 and following* 1. This consideration is inadequate. The position with regard to the potential effects of abstractions has been considered in detail with regard to the west of the region in detail at the recent Hatchfield Farm Inquiry and this evidence has not been considered. 2. Important sources e.g. Reviews of Consents and Management Plans have been omitted. 3. No consideration has been given to identifying which sites are vulnerable to changes in groundwater. 4. There has also been no consideration of the Breckland SAC.	See response to 'HRA Para 4.90' above.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Para 4.122* Mott MacDonald assessed the scheme options, for example the effects of the pipeline routes not the water supply implications and this is not clear in the HRA. The conclusion in relation to this point is not therefore correct.	See response to 'HRA Para 4.90' above.

Consultee	**Summary of comment** (N.B. Section and page numbers refer to the HRA report at Issues and Options stage)	LUC response
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Para 4.123* Detailed consideration was given to the breakdown of housing in relation to the Resource Zones at the recent Hatchfield Farm Inquiry and has not been considered.	See response to 'HRA Para 4.90' above.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Para 4.123 and 4.124* There are already underlying problems (re. assessment of potential effects of water abstraction) which have not been addressed.	See response to 'HRA Para 4.90' above.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Para 4.127* This erroneously states that Devil's Dyke is heathland when it is in fact chalk grassland. This is repeated throughout this section and affects the conclusions.	Accepted that Devil's Dyke was described as having designated heathland rather than chalk grassland plant species and this has been corrected in the current stage of HRA. Both types of habitat are sensitive to air pollution from roads (nutrient build-up from nitrogen deposition), therefore broad conclusions were unaffected.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Para 4.138* No consideration has been given to any Highways Agency plans.	HRA Screening in relation to effects on air quality will now rely on the Council's forthcoming Transport Study.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Paras 5.5 and 5.6* There were failures in the Appropriate Assessment undertaken in 2009 such that issues, for example water supply were not satisfactorily considered and could have been subject to challenge. On the grounds above and on the basis of a different data set since the publication in 2009 it cannot be concluded that likely significant effects from Option 1 will not arise.	The consultee's opinion on the soundness on the HRA of the 2009 Core Strategy is noted but the Inspector's report into the examination of the Core Strategy concluded that subject to recommended changes to Policy CS2, *"there would be no significant harm to the conservation of any European and nationally protected biodiversity sites as a result of the polices and proposals within this DPD"*. In any event, para. 5.6 the HRA Screening at Issues and Options states that the potential for the total housing distribution options to have likely significant effects has been reassessed.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Table 5.1* Various comments, mainly referencing those already made above.	The approach to HRA screening of the total housing provision has been revised since Issues and Options stage.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Para 5.7* This should be a much fuller assessment identifying sites and possible effects.	The approach to consideration of in-combination effects has been revised since Issues and Options stage.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Para 6.4* Water supply: this is not strictly true because water availability varies across FHDC area and this can be related to possible housing distribution – detailed evidence on this matter was presented to the	See response to 'HRA Para 4.90' above.

Consultee	**Summary of comment** (N.B. Section and page numbers refer to the HRA report at Issues and Options stage)	LUC response
	recent Hatchfield Farm Inquiry.	
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Table 6.3* In relation to Newmarket see comments on para 4.49 and the detailed evidence submitted to the Hatchfield Farm Inquiry.	See response to 'HRA Para 4.49' above.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Table 6.4* In terms of Newmarket the NHG considers the appraisal to be incorrect (see considerations for Chippenham Fen). There is a failure to consider water supply.	See response to 'HRA Para 4.90' above.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Para 6.10* This should be a much fuller assessment identifying sites and possible effects.	The approach to consideration of in-combination effects has been revised since Issues and Options stage.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Table 7.1* Disturbance to Annex 1 birds - the zone of 7.5 km has not been justified and varies from that of Fearnley. Urban Effects - Not all potential sites are named. Water supply - It would be possible to identify sites. The recommendations are inadequate given the data base available and, given that some sites already show signs of adverse impacts from water abstraction.	Disturbance to Annex 1 birds - see response to 'HRA Para 4.49' above. Urban effects – categorisation of types of effect and identification of European sites that are sensitive to each of these has been revised since the HRA at Issues and Options stage. Water supply - see response to 'HRA Para 4.90' above.
Pegasus Group on behalf of Newmarket Horsemen's Group	*HRA Table 7.1* All options Newmarket should be added to potential LSE sites for disturbance together with all other sites in 10 km. No consideration is given to water supply No consideration is given to flood risk	10 km disturbance buffer - see response to 'HRA Para 4.49' above. Water supply and flood risk - See response to 'HRA Para 4.90' above.