

**NORWICH RESEARCH PARK
DEVELOPMENT BRIEF SUPPLEMENTARY
PLANNING DOCUMENT**

HABITAT REGULATIONS ASSESSMENT

**SCREENING REPORT
(Consultation Version)**

**Prepared for
South Norfolk District Council**

**by
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December 2006

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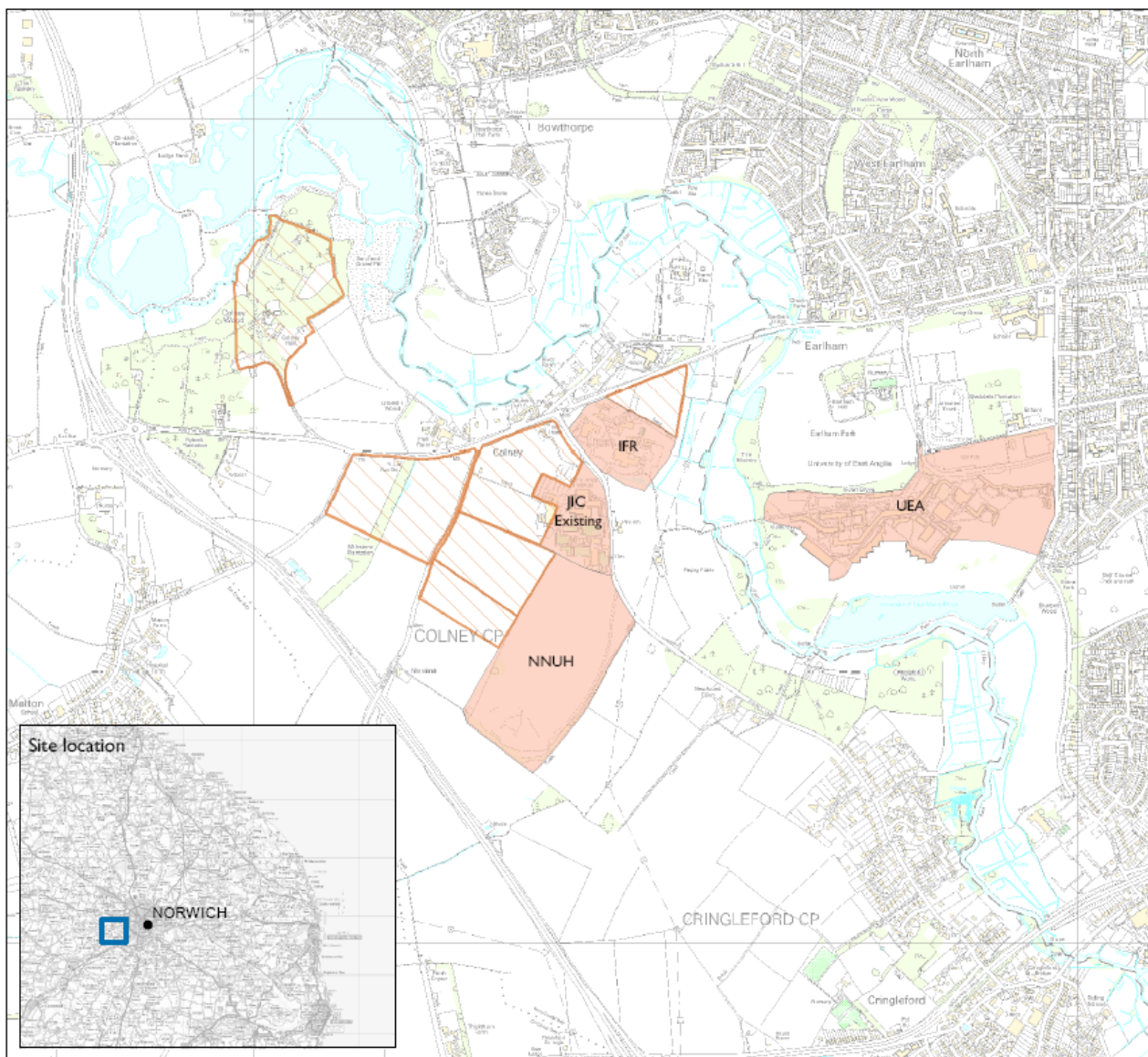
I. INTRODUCTION

- I.1. The South Norfolk Local Plan¹ allocates land to the west of Colney Lane, which is adjacent to existing research and academic institutions and the new Norfolk and Norwich University Hospital, for additional research and development uses. 15 hectares of land at Colney Hall is also allocated for these uses. These allocations will provide an extension to Norwich Research Park (NRP). The location of NRP, its constituent organisations, and the allocated sites for additional development are presented in **Figure 1.1**.
- I.2. The Local Plan requires a Development Brief to be prepared for the extension to NRP, which will set the principles and parameters for development. The Development Brief will be adopted as a Supplementary Planning Document (SPD).
- I.3. The NRP Development Brief SPD is being prepared, as far as practicable, in line with the Government's guidance on Sustainability Appraisal (SA). The SPD is also being examined to determine whether or not any of the policies it contains are likely to have a significant effect on the integrity of Natura 2000 sites and Ramsar sites, and thus decide if a full Appropriate Assessment (AA) should be conducted prior to adoption of the SPD.
- I.4. Land Use Consultants (LUC) was appointed by South Norfolk District Council in November 2006 to prepare a Habitats Regulations Assessment (HRA) Screening Report on the (Draft) NRP Development Brief SPD. The purpose of this Screening Report is to assist South Norfolk District Council in coming to a decision regarding the need for a full Appropriate Assessment of the SPD, in consultation with Natural England. This Report sets out initial work examining the potential effects of the (draft) NRP Development Brief SPD on Natura 2000 and Ramsar sites. Should a full Appropriate Assessment be required, further investigations into the potential effects of the SPD will be undertaken.

WHAT ARE NATURA 2000 SITES?

- I.5. Natura 2000 is a Europe-wide network of sites of international importance for nature conservation established under the European Council Directive 'on the conservation of natural habitats and of wild fauna and flora' (92/43/EEC; 'Habitats Directive'). This has been transposed into UK law as the Conservation (Natural Habitats &c.) Regulations (1994; 'Habitats Regulations').
- I.6. The network comprises 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 I of the Birds Directive, and migratory species). SACs are designated under

¹ Adopted in 2003 and runs until mid 2006. South Norfolk Council is currently preparing their Local Development Framework which will eventually replace the South Norfolk Local Plan.



Norwich Research Park Development Brief SPD Appropriate Assessment

Figure 1.1: Location of NRP and allocated sites for additional development

Key

- Existing development
- Allocated sites for research & development uses

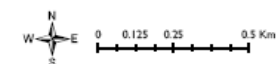
Abbreviations:

JIC: John Innes Centre

UEA: University of East Anglia

IFR: Institute of Food Research

NNUH: Norfolk & Norwich University Hospital



Date: 12/12/2006

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the Habitats Directive and target particular habitats (Annex I) and/or species (Annex II) identified as being of European importance

- I.7. In line with Government policy² this assessment also relates to Ramsar sites although these are not strictly part of the Natura 2000 network. These sites support internationally important wetland habitats and are listed under the Convention on Wetlands of International Importance especially as waterfowl habitat (Ramsar Convention, 1971).

WHAT IS HABITATS REGULATIONS ASSESSMENT?

- I.8. HRA is an assessment of the potential effects of a proposed plan on one or more Natura 2000 and Ramsar sites. The 'assessment' proper is a statement which says whether a plan or project is likely to affect the integrity of a European site. The assessment is often termed 'appropriate' because it should be 'appropriate' to its purpose under the Habitats Regulations, namely to assess the implications of the plan in respect of the sites' 'conservation objectives'.
- I.9. **Figure 1.2** shows the four stages to the HRA process required by the European Commission³. Article 6(3) of the Habitats Directive relates to Stages 1 to 3 and Article 6(4) to Stage 4. This Screening Report addresses Stage 1 of the HRA process.

STRUCTURE OF THE AA SCREENING REPORT

- I.10. This Chapter introduces the HRA screening for the (draft) NRP Development Brief SPD. The remainder of this report is structured into the following sections:

Chapter 2 – Norwich Research Park Development Brief SPD, describes the (Draft) Development Brief SPD.

Chapter 3 – Habitat Regulations Assessment Screening Methodology, sets out the approach used and the specific tasks undertaken.

Chapter 4 – Natura 2000 sites potentially affected, identifies and describes the Natura 2000 sites that could potentially be affected by the SPD including describing the conservation objectives for each site and the potential sensitivities of the sites to adverse effects.

Chapter 5 – Other relevant plans and projects, identifies and describes other plans which could have 'in-combination' effects when implemented in conjunction with the SPD, and briefly sets out the potential effects of these on the Natura 2000 sites.

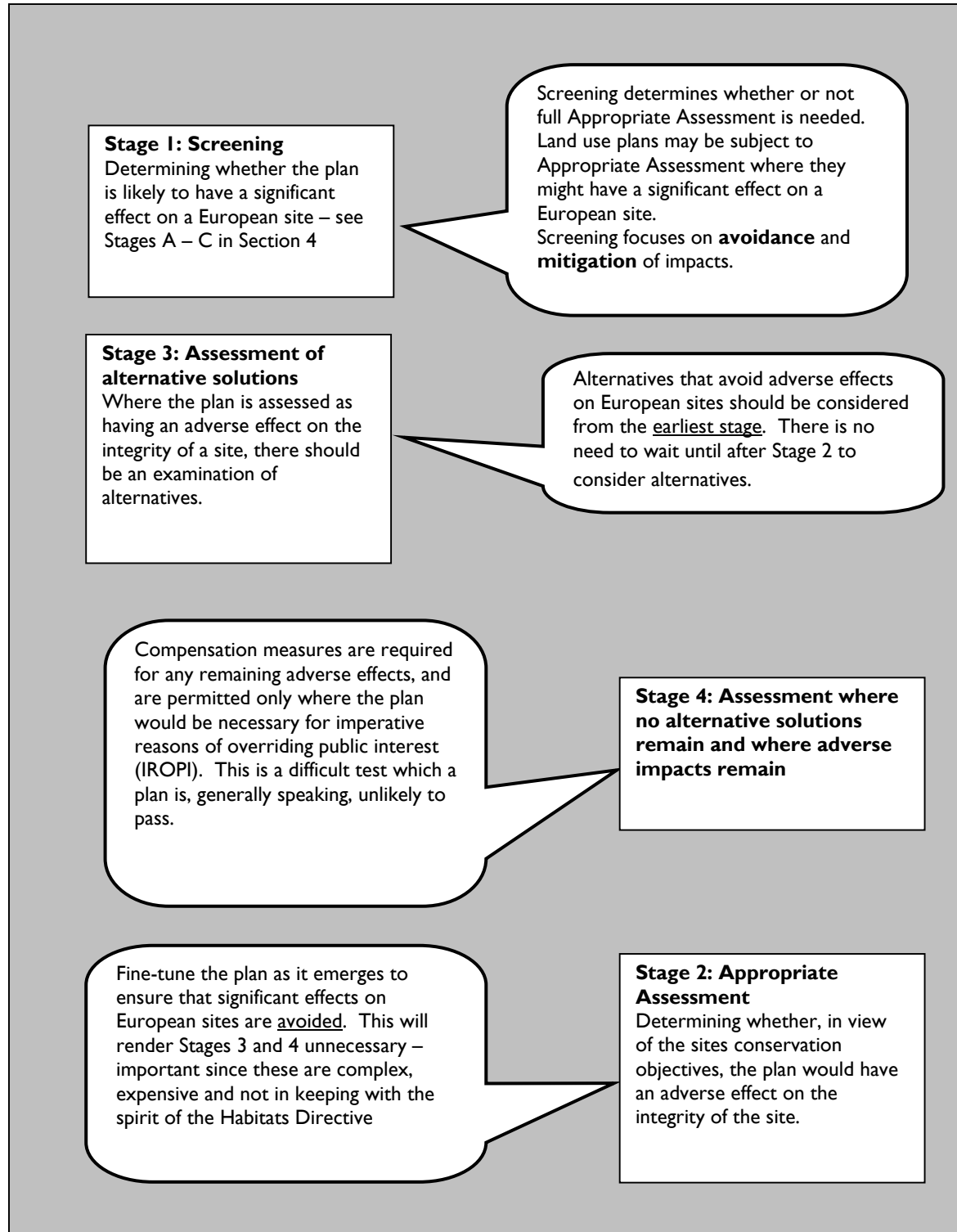
Chapter 6 – Screening assessment of the NRP Development Brief SPD, sets out the likely significance of the effects of the SPD on Natura 2000 sites, alone and in-combination, and recommends amendments to the SPD to avoid any significant adverse effects on the integrity of these sites.

² English Nature (1997) *Habitats Regulations Guidance Note 1: The Appropriate Assessment (Regulation 48). The Conservation (Natural Habitats &C) Regulations, 1994*. English Nature

³ *Assessment of plans and projects significantly affecting Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. Prepared for the European Commission Environment DG by the Impacts Assessment Unit, Oxford Brooks University, November 2001.

Chapter 7 – Conclusions and next steps, summarises the findings of the AA screening and sets out the next steps to be undertaken prior to adoption of the (draft) NRP Development Brief SPD.

Figure 1.2: Stages in the Habitats Regulations Assessment process



(Adapted from: *Appropriate Assessment of Plans: Discussion Paper*. Prepared by Scott Wilson, Levett-Therivel, Trewick Environmental Consultants and Land Use Consultants, June 2006.)

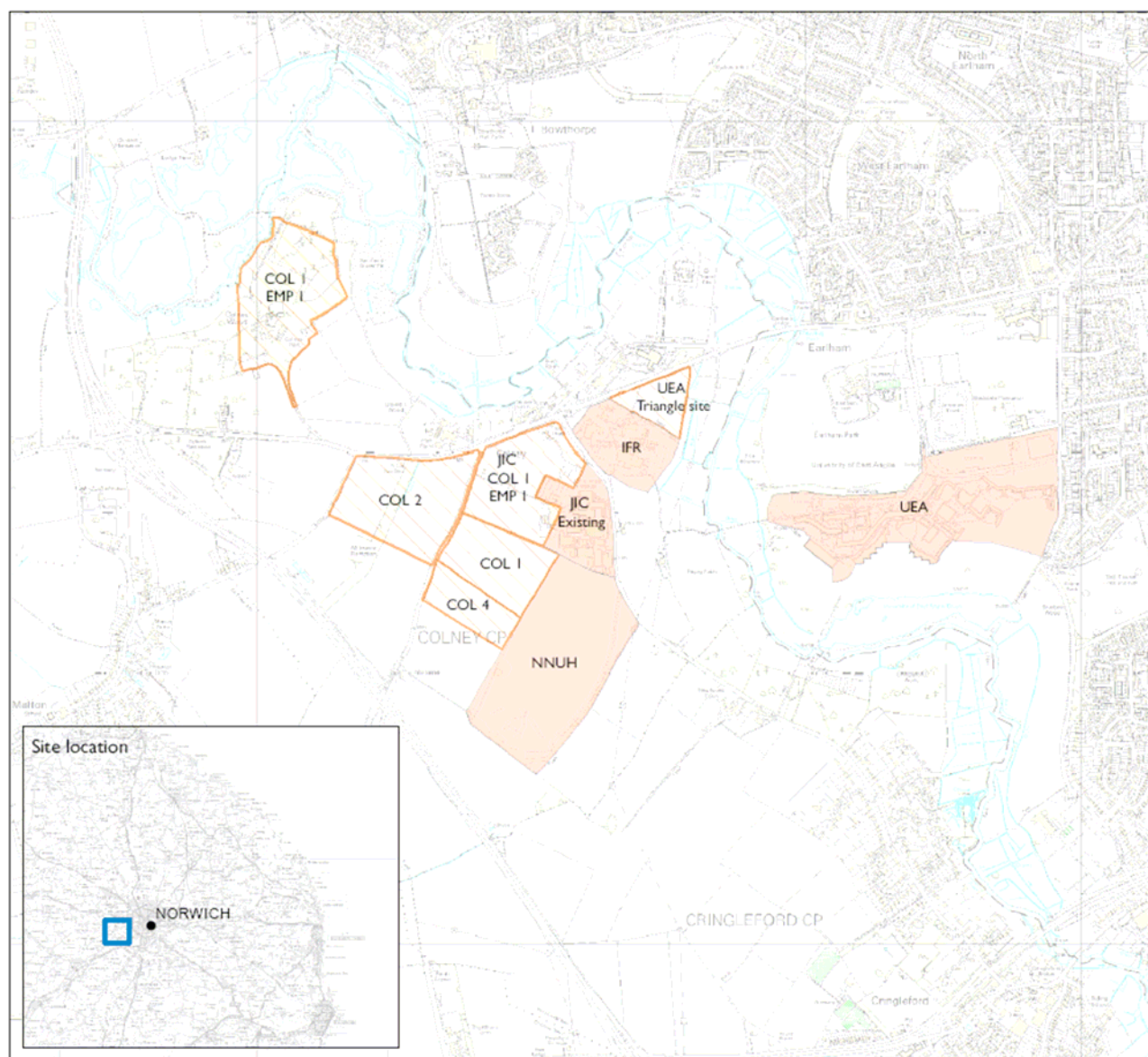
2. NRP DEVELOPMENT BRIEF SUPPLEMENTARY PLANNING DOCUMENT

THE PLANNING CONTEXT

- 2.1. The South Norfolk Local Plan (2003) allocates land to the west of Colney Lane and at Colney Hall as an extension to NRP. The following Local Plan policies describe this allocation:
- Policy EMPI: *Employment land allocations* identifies 35 hectares of land for restricted employment development uses at NRP.
 - Policy COL1: *Research and development uses at Norwich Research Park* states that ‘*planning permission will be granted for research and development uses on land...at the Norwich Research Park, Colney*’.
 - Policy COL2: *Norwich Research Park, contingency reserve* allocates 14 hectares of land between Hethersett Lane and Watton Road (B1108) as a contingency reserve and development uses at NRP.
 - Policy COL4: *Expansion of the Norfolk and Norwich Hospital* allocates 5 hectares of land between the Norfolk and Norwich Hospital and Hethersett Lane ‘*for hospital and hospital related activities in addition to research and development uses permitted by policy COL1 at the Norwich Research Park*’.
- 2.2. The allocations for additional development as set out in the Local Plan policies above are presented in **Figure 2.1**. Section 3 (Norwich Research Park) of Part Two of the extant Local Plan: *Individual Settlement Proposals – Colney* states that a development brief for NRP is to be prepared and will be published as Supplementary Planning Guidance (SPG).

THE NRP DEVELOPMENT BRIEF SPD

- 2.3. The (draft) NRP Development Brief SPD provides the parameters within which detailed planning applications for NRP can be prepared. It will be used by the Council in its determination of detailed planning applications. For the purposes of the Development Brief, the three allocations to the south of Watton Road (B1108) are considered sufficiently similar to be grouped together and are referred to as the ‘Core Area’. The Brief gives specific guidance to the Colney Hall site because of its location, which is separate from the Core Area, and its different environment.
- 2.4. The Development Brief provides an illustrative masterplan for the Core Area and for Colney Hall. It provides plot specific guidance for the whole of NRP under the following headings:
- BREEAM
 - Climate change



Norwich Research Park Development Brief SPD Appropriate Assessment

Figure 2.1: Local Plan allocations
at NRP

Key

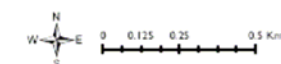
- Existing development
- Allocated sites for research
& development uses

Local Plan Allocations:

- Policy EMP1: Employment land allocations
- Policy COL1: research & development uses at NRP
- Policy COL2: Norwich Research Park contingency reserve
- Policy COL4 Expansion of the new Norfolk and Norwich Hospital

Abbreviations:

- JIC: John Innes Centre
- UEA: University of East Anglia
- IFR: Institute of Food Research
- NNUH: Norfolk & Norwich University Hospital



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- Building layout
- Size and massing of buildings
- Building performance
- Building materials
- Landmark elements and spatial variation
- Landscape within plots
- Parking, service access and services
- Sustainable drainage
- Lighting and security
- Construction
- Cut and fill
- After use
- Phasing

2.5. It also provides guidance specific to Colney Hall setting out design principles for the Hall extension, Rose Garden, Pump House area, Walled Garden, and the plantation.

IMPLICATIONS OF THE DEVELOPMENT BRIEF

2.6. The (draft) Development Brief SPD has been subject to a Sustainability Appraisal (SA) as required by the Planning and Compulsory Purchase Act 2004 and current planning policy guidance. The SA was also completed in accordance with the requirements of European Directive 2001/42/EC (known as the Strategic Environmental Assessment, or SEA, Directive). The SA sets out the key implications of the Development Brief against a range of environmental, social and economic objectives. The results of the SA (in particular those identified against the environmental objectives) were used to determine the key implications of the Development Brief on Natura 2000 sites. These can be summarised as:

- Development of greenfield land on the outskirts of Norwich.
- Potential affect on local habitats and Biodiversity Action Plan targets.
- Increase in the area of impermeable surfaces, increasing the vulnerability to flooding events. However, the Development Brief incorporates the principles of sustainable drainage systems (SuDS) to minimise and attenuate surface water run-off.
- Increase in the consumption of energy. However, the Development Brief requires any planning application to include a full energy audit of the proposal

which should demonstrate mitigation measures to reduce carbon emissions. The overall aspiration of development at NRP is to achieve carbon neutrality over the life-time of the development.

- Traffic generation.
- Increase in noise, vibration and light pollution. Whilst these are expected to be mitigated by appropriate measures, residual impacts are expected.
- Generation of waste.

3. HABITATS REGULATIONS ASSESSMENT SCREENING METHODOLOGY

- 3.1. The HRA of the (draft) Development Brief SPD has been undertaken in line with the European Commission's guidance on the 'Assessment of plans and projects significantly affecting Natura 2000 sites', and seeks to meet the requirements of the Habitat's Directive. The tasks undertaken in preparing this HRA Screening Report are described in detail below.

Task 1: Identification of the Natura 2000 sites which may be affected by the (draft) NRP Development Brief SPD and the factors contributing to and defining the integrity of these sites

- 3.2. An initial investigation was undertaken to identify Natura 2000 and Ramsar sites with potential to be affected by the (draft) NRP Development Brief SPD. This involved use of GIS data (nature on the map, English Nature) as well as consultation with the Natural England's local team⁴. In line with the precautionary approach sites at relatively great distances from the site boundary were included in the study, with a radius of 10 km used in line with draft Natural England guidance⁵. The Natura 2000 and Ramsar sites potentially affected by the (draft) NRP Development Brief SPD are shown in **Figure 3.1** and comprise:

- The River Wensum SAC;
- The Broadland/the Broads SPA and Ramsar site; and
- The Norfolk Valley Fens SAC.

- 3.3. The attributes of these sites which contribute to and define their integrity are identified and described in **Section 4** (including the conservation objectives and citations for the sites). Information collated was appropriate to inform a screening decision.

Task 2: Description of the (draft) NRP Development Brief SPD

- 3.4. A description of the (draft) NRP Development Brief SPD has been prepared, setting out the size, scale, location, area and key implications of the Development Brief. These are summarised in **Section 2**.

⁴ Mr. I. Levett, Norfolk Regional Office: 21 November 2006, 16:00

⁵ David Tyldesley and Associates (2006) The Assessment of Regional Spatial Strategies and Sub-Regional Strategies Under the Provisions of the Habitats Regulations: Draft guidance (issue 2) English Nature.

Task 3: Identification of other plans and projects which may have ‘in-combination’ effects

- 3.5. Other plans and projects which could lead to potentially significant ‘in-combination’ effects when implemented together with the (draft) NRP Development Brief SPD have been identified. These included local, county and regional level plans covering South Norfolk District Council as well as those covering adjoining administrative areas. These are discussed in detail in **Section 5**.

Task 4: Completion of the ‘Assessment of the Significance of the Impacts’ matrix for the NRP Development Brief SPD for the purposes of screening

- 3.6. An ‘Assessment of the Impacts’ matrix was completed for the (draft) NRP Development Brief SPD, with particular consideration given to the possible pathways for effects to be transmitted from activities associated with the SPD to features contributing to the integrity of the Natura 2000 and Ramsar sites (e.g. groundwater). A risk-based approach involving application of the precautionary principle was adopted in the assessment of likely effects, such that an assessment of ‘no significant effect’ was only made where it was considered unlikely, based on current knowledge and information available, that the SPD could have a significant effect on the integrity of the Natura 2000 and Ramsar site(s). The examination of potential effects involved an examination of potential ‘in-combination’ effects of the SPD and other plans and programmes.

Task 5: Preparation of the Appropriate Assessment Screening Report

- 3.7. The findings of Tasks 1 to 4 have been set out in this Appropriate Assessment Screening Report. South Norfolk District Council is seeking the views of Natural England on the findings of this report. These findings and the consultation responses will then be taken into account by South Norfolk Council in deciding whether or not to undertake a full Appropriate Assessment of the (draft) NRP Development Brief SPD.

4. NATURA 2000 AND RAMSAR SITES POTENTIALLY AFFECTED

NATURA 2000 AND RAMSAR SITE DESCRIPTIVE INFORMATION

- 4.1. To enable an initial assessment of the potential effects of the (draft) NRP Development Brief SPD on the Natura 2000 and Ramsar sites, descriptive information was collated for each of the sites, including:
- Natura 2000 and Ramsar standard data forms.
 - Component SSSI citations detailing their ecological interest.
 - Conservation Objectives relating to the Natura 2000/component SSSI designated interest features.
 - Definitions of favourable condition for the designated interest features.
 - Site management plans and other miscellaneous information relating to management, condition assessments and English Nature's views on management.
- 4.2. An analysis of the information sources enabled the identification of the Natura 2000 interest features as summarised below. More detailed information about each site is presented in **Tables 4.1 to 4.3**, including the Conservation Objectives⁶ for the sites and the associated definitions of favourable condition (see section *Detailed Natura 2000 descriptive information*). This information made it possible to identify those features of each site which determine site integrity, the specific sensitivities of the sites, and an analysis of how potential changes caused by the (draft) NRP Development Brief SPD may impact upon site integrity.

SUMMARY OF THE NATURA 2000 INTEREST FEATURES

- 4.3. The three Natura 2000 sites considered are designated for wetland habitats and/or associated species.
- 4.4. The Broads (Broadlands) SAC, SPA and Ramsar site is comprised of a series of flooded medieval peat cuttings. The SAC designation relates to habitats including hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. Natural eutrophic lakes, transition mires and quaking bogs, calcareous fens, alkaline fens and alluvial forests and *Molinia* meadows on calcareous peaty or clayey-silt-laden solids. Annex 2 species include fen orchid *Liparis loeselii* and Desmoulin's whorl snail and

⁶ The Conservation Objectives for the Natura 2000 sites relate to the maintenance of the designated interest feature(s) in a favourable condition⁶. The Conservation Objectives and definitions of favourable condition are provided for each component Site of Special Scientific Interest (SSSI) which form part of the Natura 2000 site. In some cases the sources of information provided definitions for Natura 2000 interest features only, whilst more recent definitions related to both the Natura 2000 and SSSI interest features.

otter. This site is designated an SPA (and Ramsar site) due to the presence of breeding bittern and marsh harrier, populations of overwintering Annex I birds such as; bewick's swan, bittern, ruff, whooper swan, and gadwall, pink-footed goose and shoveler. It is a wetland of international importance due to its assemblage of at least 20,000 waterfowl.

- 4.5. Norfolk Valley Fens SAC comprises scattered sites, primarily designated for the presence of rare spring fed alkaline fens which support a rich floral assemblage, in addition to strong populations of narrow-mouthed whorl snail and Desmoulin's whorl snail. The SAC supports a diverse range of other Annex I habitats including; northern atlantic wet heaths, European dry heaths, semi-natural dry grasslands and scrubland facies on calcareous substrates, *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils, calcareous fens and alluvial forest.
- 4.6. The River Wensum SAC, is designated primarily for its water courses with *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation in addition to its population of White-clawed crayfish. The River Wensum SAC is also a stronghold for the Desmoulin's whorl snail, brook lamprey and bullhead, all Annex 2 species.

Table 4.1: The Broads/Broadlands SAC, SPA and Ramsar site

Site description	
The Broads/Broadland SAC, SPA and Ramsar site is a low-lying wetland complex straddling the boundaries between east Norfolk and northern Suffolk in eastern England. The Broads are a series of flooded medieval peat cuttings. They lie within the floodplains of five principal river systems, known as Broadland. The area includes the river valley systems of the Bure, Yare and Waveney and their major tributaries. The distinctive open landscape comprises a complex and interlinked mosaic of wetland habitats including open water, reedbeds, carr woodland, grazing marsh and fen meadow, forming one of the finest marshland complexes in the UK with an extremely diverse range of plant communities. The area is of international importance for a variety of wintering and breeding raptors and waterbirds associated with extensive lowland marshes ⁷ .	
Component SSSI(s)	<ul style="list-style-type: none"> • Yare Broads and Marshes. • Crostwick Marsh.
SAC Designated interest feature(s)	<ul style="list-style-type: none"> • Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp. • Natural eutrophic lakes with <i>Magnopotamion</i> or <i>Hydrochariton</i>-type vegetation. • Transition mires and quaking bogs. • Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>. • Alkaline fens. • Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i>. • Small populations of fen orchid <i>Liparis loeselii</i>. • Large population of Desmoulin's whorl snail.
SPA Designated interest feature(s)	<ul style="list-style-type: none"> • Breeding bittern and marsh harrier • Overwintering hen harrier, bewick's swan, bittern, ruff, whooper swan, gadwall, pink footed goose, and shoveler.

⁷ The Broads, SAC site description <http://www.jncc.gov.uk>.

SPA Conservation Objectives	<ul style="list-style-type: none"> To maintain in favourable condition the habitats for population of bittern, marsh harrier, hen harrier, bewick's swan, ruff, whooper swan, gadwall, pink footed goose, and shoveler.
Ramsar designated interest feature(s)	<ul style="list-style-type: none"> Calcareous fens. Alkaline fens. Alluvial forests. Desmoulin's whorl snail Otter. Fen orchid. Important populations of bewick's swan, gadwall, northern shoveler, and eurasian wigeon.
Summary of standards defining favourable condition of relevant SAC/SPA interest feature	
Hard oligo-mesotrophic waters, natural eutrophic lakes, transition mires and quaking bogs, calcareous fens, alkaline fens, alluvial forests.	<ul style="list-style-type: none"> Maintenance of appropriate water levels with absence of over drying and unnatural drainage regimes. Maintenance of appropriate nutrient levels, such as nutrient poor oligo-mesotrophic waters and nutrient rich eutrophic lakes. Extent of all designated wetland habitats. Maintenance of suitable species composition and vegetation structure. Maintenance of characteristic and notable species.
Fen orchid	<ul style="list-style-type: none"> Maintain extent and quality of suitable habitat. Maintenance of water quality and quantity with high water table and regular winter flooding.
Desmoulin's whorl snail.	<ul style="list-style-type: none"> Maintenance of habitat structure and extent of suitable marginal vegetation. Maintenance of colonies in adjacent habitats (fens, rivers). Maintenance of water quality with suitable levels of dissolved oxygen, un-ionised ammonia, pH, and metals. Maintenance of water table close to surface layer so ground does not becomes dry.
Breeding and over-wintering bittern , marsh harrier and over-wintering hen harrier.	<ul style="list-style-type: none"> Disturbance with no significant reduction or displacement of breeding birds between March-August. Extent and distribution of habitat with no significant deviation from reference level. Maintenance of reedbeds and ditches as suitable for breeding bittern, and marsh harrier hunting and breeding. Maintenance of habitat structure/features including reedbeds, large areas of open water, and appropriate water level to provide shallow water in reeds, with frequent deep pools and dykes. Food availability with sufficient fish and amphibians for bittern and nesting wading birds, game birds and small mammals for marsh harrier and hen harrier. Availability of trees and suitable scrub habitat for communal wintering harrier roosts.

Overwintering bewick's swan, ruff, whooper swan, gadwall, pink footed goose, and shoveler	<ul style="list-style-type: none"> • Disturbance with no significant reduction or displacement of wintering birds between Oct-March. • Extent and distribution of habitat with no significant deviation from reference level. • Maintenance of water level to provide extensive shallow water (feeding). • Food availability including vegetation cover, aquatic plants and invertebrates.
Other possible management issues (various sources including Natura 2000 standard data form, SSSI Views About Management, SSSI Condition assessments, etc.)	
<ul style="list-style-type: none"> • Habitat management: restriction of natural colonisation/succession to maintain wetlands is currently being controlled by conservation organisations. • Water quality: saline intrusion from rising sea levels and eutrophication from sewage outfall. Some sewage works are now stripping phosphorus and mud pumping to remove enriched material from lakes. • Water quantity: reduced summer flows increased by abstraction are currently being investigated by the Environment Agency, Broads Authority and Natural England. • Recreational pressure: potential terrestrial disturbance well controlled by boardwalks. Water-borne recreation is controlled by speed limits but boat numbers remain a problem. • Majority of SSSI units are in an Unfavourable (Declining and No Change) condition due largely to water abstraction and eutrophication. 	

Table 4.2: Norfolk Valley Fens SAC

Site description	
Norfolk Valley Fens contains one of the main concentrations of lowland alkaline fens. This site comprises a series of valley-head spring-fed fens. Such spring-fed flush fens are very rare in the lowlands. Most of the vegetation at this site is of the small sedge fen type, but there are transitions to reedswamp and other fen and wet grassland types. The individual fens vary in their structure according to intensity of management and provide a wide range of variation. There is a rich flora associated with these fens ⁸ .	
Component SSSI(s)	<ul style="list-style-type: none"> • Coston Fen, Runhall
SAC Designated interest feature(s)	<ul style="list-style-type: none"> • Alkaline fens. • Narrow-mouthed whorl snail • Desmoulin's whorl snail
SAC Conservation Objectives	<ul style="list-style-type: none"> • To maintain in favourable condition the alkaline fens, marshes and swamps and habitats for the populations of narrow mouthed and desmoulin's whorl snail.
Summary of standards defining favourable condition of SAC interest feature	
Alkaline Fens	<ul style="list-style-type: none"> • Maintenance of habitat structure of varied sward mosaic with low levels of litter, bare mud, peat and scrubby species. • Maintenance of summer water levels throughout year <u>with adequate drainage and seepage preventing standing</u>

⁸ Norfolk Valley Fens SAC site description <http://www.jncc.gov.uk>.

	with adequate drainage and seepage preventing standing water
Desmoulin's and Narrow-mouthed whorl snail	<ul style="list-style-type: none"> • Maintenance of habitat structure and extent of fen vegetation. • Maintenance of colonies in adjacent riverine habitats. • Maintenance of water quality with suitable levels of dissolved oxygen, un-ionised ammonia, pH, and metals. • Maintenance of water table close to surface layer so ground remains moist throughout year.
Other possible management issues (various sources including Natura 2000 standard data form, SSSI Views About Management, SSSI Condition assessments, etc.)	
<ul style="list-style-type: none"> • Habitat management: reduction in traditional cutting and grazing causing scrub and woodland to encroach on open habitats. • Water quantity: vulnerable to reductions in water table due primarily to groundwater abstraction. This is being addressed by the Environment Agency's review of the AMP3 programme. • Majority of SSSI units are in Favourable/Unfavourable Recovering condition with a single unit Unfavourable No Change. 	

Table 4.3: River Wensum SAC

Site description	
The Wensum represents an example of an enriched, calcareous lowland river. Although the river is extensively regulated by weirs, over 100 plant species occur including <i>Ranunculus</i> vegetation occurring sporadically throughout much of the river's length. It supports a rich invertebrate assemblage and together with its relatively natural corridor, represents the best whole river of its type in conservation terms ⁹ .	
Component SSSI(s)	<ul style="list-style-type: none"> • River Wensum
SAC Designated interest feature(s)	<ul style="list-style-type: none"> • Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation • White-clawed crayfish
SAC Conservation Objectives	<ul style="list-style-type: none"> • To maintain the Water courses of plain to montane levels in favourable condition and habitats for bullhead, brook lamprey, white-clawed crayfish, desmoulin's whorl snail
Summary of standards defining favourable condition of SAC interest feature	
Water courses of plain to montane levels	<ul style="list-style-type: none"> • Maintenance of habitat structure with the river form appropriate to a natural flow regime, incorporating both flushing and base flows and containing a largely gravel substrate in fast flowing stretches and • Maintenance of water quality with suitable levels of

⁹ The River Wensum SAC site description <http://www.jncc.gov.uk>.

	<ul style="list-style-type: none"> dissolved oxygen, un-ionised ammonia, pH, and metals. Presence of plant species characteristic of habitat.
White-clawed crayfish	<ul style="list-style-type: none"> Maintenance of water quantity and quality Maintaining the extent of suitable habitat including natural river form, suitable river vegetation, cobbles and boulders, submerged woody debris, bankside refuges. Absence of introduced and/or diseased crayfish species and fish stocking.
Bullhead & Brook Lamprey	<ul style="list-style-type: none"> Maintenance of habitat structure with natural flow regime, slack water areas and an absence of artificial obstructions. Extent of habitat with areas of gravel and pebble dominated substrate, patchy submerged vegetation, and intermittent tree cover. Maintenance of water quality with suitable levels of dissolved oxygen, un-ionised ammonia, pH, and metals. Absence of introduced species and fish stocking. Zero exploitation of lamprey for bait. Maintenance of areas of silt substrate important for lamprey nursery habitat.
Desmoulin's whorl snail	<ul style="list-style-type: none"> Maintenance of habitat structure and extent of dense marginal vegetation. Maintenance of colonies in adjacent fen habitats. Maintenance of water quality with suitable levels of dissolved oxygen, un-ionised ammonia, pH, and metals. Maintenance of water table close to surface layer so ground never becomes dry.
Other possible management issues (various sources including Natura 2000 standard data form, SSSI Views About Management, SSSI Condition assessments, Management Plans etc.)	
<ul style="list-style-type: none"> Water quality: input of silt and agricultural chemicals as a result of agriculture has been a problem and a strategy is required to control eutrophication. Reversion of arable fields to low input grassland should be encouraged. Water quantity: further development of the floodplain has the potential to alter the flow regime and river ecology is threatened by water abstraction. Bullhead and brook lamprey are vulnerable to the modification of riffle habitats through changes in water level. Habitat loss: desmoulin's whorl snail is vulnerable to interference with bankside vegetation. Introduced/invasive species: the further spread of the signal crayfish would threaten the long term viability of the white-clawed crayfish whilst may be vulnerable to the introduction of non-native fish species. Majority of relevant SSSI units are in Unfavourable Recovering condition with a single unit in Unfavourable Declining condition. 	

Summary of the Natura 2000 site sensitivities

- 4.7. From the above analysis a number of common potential sensitivities can be identified which vary in magnitude from site to site, depending on:
- The type and severity of the threat;
 - The type, sensitivity and condition of the designated interest feature(s); and
 - The presence and strength of pathways or linkages between the activity/operation and receptor.

Water quantity/quality

- 4.8. A common Conservation Objective is to maintain favourable hydrology. The sites are sensitive to reduced water levels associated with abstraction and this is currently being investigated by the Broad Authority and Environment Agency. The sites are also vulnerable to fluctuations in water quality and eutrophication associated with pollution outfalls, agricultural run off and excess silt levels. This is currently being addressed, with some of the sewage works undertaking phosphorus stripping and mud-pumping.

Habitat management

- 4.9. Each of the sites is sensitive to natural colonisation associated with the reduction of traditional cutting and grazing regimes. These management regimes are now encouraged. Management operations outside the Natura 2000 sites or associated with non-designated features may also impact upon the designated features, for example affecting foraging habitat, buffer integrity, or local hydrological regimes.

Habitat loss

- 4.10. Land take and the loss of designated habitat within a Natura 2000 site would be likely to have an adverse impact upon integrity. This may also relate to non-designated habitat features. For example, at Norfolk Valley Fens SAC, any habitat fragmentation or habitat loss associated with waterside vegetation may have an adverse impact on Desmoulin's Whorl snail. Similarly removal of habitat adjacent to or within the vicinity of a designated habitat may adversely affect that habitat, for example, through a reduction in buffering potential or due to changes in local hydrology.

Disturbance

- 4.11. Disturbance impacts may occur either from on-site or off-site activities, and may be either physical or non-physical in nature. For example on-site disturbance may cause the physical degradation of habitats such as the erosion of waterside banks in areas subjected to high waterborne recreation.
- 4.12. The visual presence of visitors and noise may also cause disturbance, for example deterring designated species (e.g. bittern) from using certain areas, deterring prey species or reducing reproductive success. Such problems can be overcome through visitor management such as the use of boardwalks or control of boat numbers.

Introduced/invasive species

- 4.13. The long-term viability of the native white-clawed crayfish population in the River Wensum SAC would be threatened by an increase in the distribution of the introduced signal crayfish. Similarly the introduction of fish populations could impact upon native populations, such as lamprey. As such, any activity which led to the introduction, or increased abundance, of potential invasive species could comprise an adverse impact on the integrity of the Natura 2000 site.

5. OTHER RELEVANT PLANS AND PROJECTS

- 5.1. Article 6(3) of the Habitats Directive 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 there on, either individually or in combination with other plans or projects’. The first stage in identifying ‘in-combination’ effects involved identifying which other plans and projects may be affecting the Nature 2000 sites which were the focus of this assessment.
- 5.2. LUC has identified national, regional and local level plans which are likely to be affecting the Natura 2000 sites which are subject to this investigation, including current and likely future plans which apply to the South Norfolk County administrative area and adjoining areas where appropriate. There are a large number of potentially relevant plans, which are listed in **Box 5.1** below. A brief description setting their overall aim or purpose is provided in **Appendix I**. No projects were identified as being relevant to this screening assessment.

Box 5.1: Relevant plans which are likely to affect the Natura 2000 sites

East of England Plan, Draft revision to the Regional Spatial Strategy (RSS) for the East of England (2006) – Panel Report (including the Regional Transport Strategy for the East of England).

Integrated Regional Strategy (2005)

East of England Regional Waste Management Strategy (2002)

Sustainable Development Framework for the East of England (2001)

Sustainable Communities in the East of England – Building for the future (2004)

A Shared Vision: the regional economic strategy for the East of England (2004)

Revised Regional Housing Strategy for the East of England: Strategy Document 2005-2010 (2005)

Towns and Cities Strategy and Action Plan: Urban Renaissance in the East of England

‘Our Environment, Our Future’ The Regional Environmental Strategy for the East of England (2003)

Woodland for Life Regional Woodland Strategy for the East of England (2004)

Norfolk Structure Plan 2003 (Adopted 1999)

Norfolk Waste Local Plan (2004, final publication pending)

Norfolk Local Transport Plan 2006-2011

South Norfolk Local plan (2003)

City of Norwich Replacement Local Plan (November 2004)

Anglian Water Resources Plan (2004)

Essex and Suffolk Water Resources Plan (2005)

Broadland Rivers Catchment Abstraction Management Strategy (Environment Agency, 2006)

- 5.3. The potential effects of these plans on Natura 2000 sites in terms of their habitats and qualifying features are considered in **Table 5.1** below.
- 5.4. Plans identified as having effects on the Natura 2000 sites included spatial plans (Development Plan Documents and Regional Spatial Strategies), transport plans and water resources plans. In particular, proposals for large scale housing, employment and infrastructure developments, set out in the (Draft) East of England Plan, the Norfolk Structure Plan, the South Norfolk Local Plan and the City of Norwich Replacement Local Plan have the potential for a range of impacts on Natura 2000 sites (depending on the location of development) including:
- Recreation impacts associated with housing development within close proximity (i.e. 5km) of Natura 2000 sites.
 - Lowering of surface and groundwater levels, locally or further afield, and increasing the concentration of water pollution due to abstraction for supply of growing communities.
 - Increased water pollution associated with urbanisation.
 - Landtake, disturbance and reduced water quality arising from demand for treatment and disposal of increased volumes of waste.
 - Reduced air quality, land take, water contamination, disturbance and severage of habitats due to traffic generation and demand for additional transport infrastructure.
- 5.5. Local Transport Plans and water company Water Resources Plans are likely to include proposals which facilitate the implementation of proposals in the Regional Spatial Strategy, particularly with regard to transport infrastructure improvements and increased water supply. As such, the potential in-combination effects of these are reflected to a large degree in the list above. These impacts may be mitigated by policies in the (Draft) East of England Plan and future Local Development Frameworks, Local Transport Plans and Water Resources Plans which seek to protect and enhance nature conservation values. However, it is recognised that some residual effects on Natura 2000 sites are likely.
- 5.6. The Broadland Rivers Catchment Abstraction Management Strategy describes the water resource for each Water Resource Management Unit (WRMU) that makes up the catchment area. Out of the eight WRMUs, only three have rivers with water availability. The remainder either have no water available, are over-licensed or over-abstacted. Additional development could increase water abstraction which could impact on water availability in the area and the integrity of Natura 2000 sites. However, the Broadland Rivers Catchment Abstraction Management Strategy refers to Natura 2000 sites and the strategies for WRMUs that contain or feed into these sites have regard to their conservation.

Table 5.1: Review of other relevant plans

Site	Habitat	Qualifying feature	Threat	Impact	Plans, projects and trends
Norfolk Valley Fens	Lowland alkaline fens	Alkaline fens Desmoulin's and narrow-mouthed whorl snail	Abstraction	Drying, change in species composition Reduction in water quality resulting in changes to species composition and structure Reduction/ loss of population Change in habitat composition Loss of suitable vegetation	<p>At the regional level, the East of England Plan includes proposals for 83,200 new dwellings, of which 45,500 are to be distributed within the Norwich sub-region and Norwich Policy Area (Policy NSR4: housing). It also includes proposals for employment and accompanying infrastructure. The Integrated Regional Strategy and the Sustainable Development Framework for the East of England also promotes housing, employment and infrastructure development. The Regional Economic Strategy sets out a projected job growth of 64,700 jobs in the East of England between 2001 and 2021. On the basis of this development, the potential effects on Natura 2000 sites from water abstraction should be considered. Increased abstraction could result in a lowering of surface and groundwater levels locally or further afield.</p> <p>The existing Norfolk Structure Plan makes allowance for the construction of 61,000 new houses in the period 1993 to 2011 in the county, including 11,000 in Breckland, 9,400 in Broadland, 4,700 in Great Yarmouth, 11,000 in King's Lynn and West Norfolk, 7,400 in Norwich and 10,200 in South Norfolk. The Structure Plan also identifies the Norwich Policy Area, Great Yarmouth, King's Lynn, Thetford and Dereham as major locations for economic development. This development will also require additional water abstraction which could result in a lowering of surface and groundwater levels locally or further afield. This should therefore be considered as a potential impact on Natura 2000 sites.</p> <p>Proposals for development within the South Norfolk</p>

Site	Habitat	Qualifying feature	Threat	Impact	Plans, projects and trends
					<p>and City of Norwich Local Plans will also result in increased abstraction which could have a minor indirect impact on Natura 2000 sites.</p> <p>Out of the eight Water Resource Management Units (WRMUs) that make up the Broadland Rivers Catchment Abstraction Management Strategy, there are only three which have rivers with water availability. The remainder either have no water available, are over licensed or over abstracted. The WRMU that covers Norwich Research Park is identified as Over Licensed in the Broadland Rivers Catchment Abstraction Management Strategy. Additional development could increase abstraction which could impact on water availability in the area. This has the potential to have indirectly impact on Natura 2000 sites.</p>
			Natural succession	<p>Change in habitat composition, loss of suitable vegetation and reduction/loss of population</p> <p>Reduction in water quality resulting in changes to species composition and structure</p>	The threat of natural succession relates to the management of the Natura 2000 sites to ensure that habitats are maintained. Therefore, it is unlikely that plans listed in Box 5.1 are likely to have an impact on the natural success of Natura 2000 sites.
River Wensum	Enriched calcareous lowland river	Water courses of plain to montane levels with the <i>Ranunculus</i>	Eutrophication	Change in chemical composition and water quality, loss of designated species from out-competing common species	Many of the plans at the regional (i.e. the East of England Plan, the Integrated Regional Strategy, the Sustainable Development Framework for the East of England and the Regional Economic Strategy), county (i.e. the Norfolk Structure Plan, the Norfolk Waste Local Plan and the Norfolk Local Transport Plan) and local levels

Site	Habitat	Qualifying feature	Threat	Impact	Plans, projects and trends
		<i>fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation			<p>(i.e. the South Norfolk and City of Norwich Local Plans) seek to promote housing, employment and infrastructure development. On the basis of this development, the following potential effects on Natura 2000 sites should be considered:</p> <ul style="list-style-type: none"> • Development will result in urbanisation which will result in diffuse water pollution associated with urban run-off. • Development will generate waste water which will increase demand for its treatment and disposal resulting in reduce water quality. • Development is likely to result in traffic generation and increase the use of the car. This could result in water contamination of nearby water bodies. • The East of England Regional Waste Management Strategy sets out waste management needs in the region. However, development is likely to increase the volume of waste produced which has the potential to contaminate water, e.g. through leachate. <p>These potential risks might however be mitigated by other policies which seek to protect and enhance nature conservation sites in the region and water quality. For example, the Towns and Cities Strategy and Action Plan: Urban Renaissance in the East of England looks to assist in the delivery of development in a sustainable manner and as such may assist in mitigating some of the potential impacts of growth proposals on the Natura 2000 network.</p>
			Abstraction	Loss and/or reduction of designated habitat	At the regional level, the East of England Plan includes proposals for 83,200 new dwellings, of which 45,500 are to be distributed within the Norwich sub-region and

Site	Habitat	Qualifying feature	Threat	Impact	Plans, projects and trends
				<p>Changes in species composition</p> <p>Reduction in water quality resulting in changes to species composition and structure</p>	<p>Norwich Policy Area (Policy NSR4: housing). It also includes proposals for employment and accompanying infrastructure. The Integrated Regional Strategy and the Sustainable Development Framework for the East of England also promotes housing, employment and infrastructure development. The Regional Economic Strategy sets out a projected job growth of 64,700 jobs in the East of England between 2001 and 2021. On the basis of this development, the potential effects on Natura 2000 sites from water abstraction should be considered. Increased abstraction could result in a lowering of surface and groundwater levels locally or further afield.</p> <p>The existing Norfolk Structure Plan makes allowance for the construction of 61,000 new houses in the period 1993 to 2011 in the county, including 11,000 in Breckland, 9,400 in Broadland, 4,700 in Great Yarmouth, 11,000 in King's Lynn and West Norfolk, 7,400 in Norwich and 10,200 in South Norfolk. The Structure Plan also identifies the Norwich Policy Area, Great Yarmouth, King's Lynn, Thetford and Dereham as major locations for economic development. This development will also require additional water abstraction which could result in a lowering of surface and groundwater levels locally or further afield. This should therefore be considered as a potential impact on Natura 2000 sites.</p> <p>Proposals for development within the South Norfolk and City of Norwich Local Plans will also result in increased abstraction which could have a minor indirect impact on Natura 2000 sites.</p> <p>Out of the eight Water Resource Management Units</p>

Site	Habitat	Qualifying feature	Threat	Impact	Plans, projects and trends
					(WRMUs) that make up the Broadland Rivers Catchment Abstraction Management Strategy, there are only three which have rivers with water availability. The remainder either have no water available, are over licensed or over abstracted. The WRMU that covers Norwich Research Park is identified as Over Licensed in the Broadland Rivers Catchment Abstraction Management Strategy. Additional development could increase abstraction which could impact on water availability in the area. This has the potential to have indirectly impact on Natura 2000 sites.
		White-clawed crayfish	Eutrophication	<p>Loss of species from effects of toxic contamination</p> <p>Loss of designated species from reduction in water quality and reduction of food availability</p>	<p>Many of the plans at the regional (i.e. the East of England Plan, the Integrated Regional Strategy, the Sustainable Development Framework for the East of England and the Regional Economic Strategy), county (i.e. the Norfolk Structure Plan, the Norfolk Waste Local Plan and the Norfolk Local Transport Plan) and local levels (i.e. the South Norfolk and City of Norwich Local Plans) seek to promote housing, employment and infrastructure development. On the basis of this development, the following potential effects on Natura 2000 sites should be considered:</p> <ul style="list-style-type: none"> • Development will result in urbanisation which will result in diffuse water pollution associated with urban run-off. • Development will generate waste water which will increase demand for its treatment and disposal resulting in reduce water quality. • Development is likely to result in traffic generation and increase the use of the car. This could result in water contamination of nearby water bodies.

Site	Habitat	Qualifying feature	Threat	Impact	Plans, projects and trends
					<ul style="list-style-type: none"> The East of England Regional Waste Management Strategy sets out waste management needs in the region. However, development is likely to increase the volume of waste produced which has the potential to contaminate water, e.g. through leachate. <p>These potential risks might however be mitigated by other policies which seek to protect and enhance nature conservation sites in the region and water quality. For example, the Towns and Cities Strategy and Action Plan: Urban Renaissance in the East of England looks to assist in the delivery of development in a sustainable manner and as such may assist in mitigating some of the potential impacts of growth proposals on the Natura 2000 network.</p>
			Introduced/ invasive species	Loss of species from associated diseases and increased competition	<p>Many of the plans at the regional (i.e. the East of England Plan, the Integrated Regional Strategy, the Sustainable Development Framework for the East of England and the Regional Economic Strategy), county (i.e. the Norfolk Structure Plan, the Norfolk Waste Local Plan and the Norfolk Local Transport Plan) and local levels (i.e. the South Norfolk and City of Norwich Local Plans) seek to promote housing, employment and infrastructure development. On the basis of this, the potential recreational effects from new development within close proximity (5km) of Natura 2000 sites should be considered. Increased recreation could disturb qualifying features of The Broads/ Broadlands.</p> <p>Increased use of the area may have an associated increased risk of transport of introduced species.</p> <p>Many of the plans also seek to promote tourism in the area. For example, Policy NSR2 (Promoting the tourism</p>

Site	Habitat	Qualifying feature	Threat	Impact	Plans, projects and trends
					sector) of the East of England Plan seeks to encourage tourism and highlights the role of the Norwich Sub-Region as a gateway to the broads. The potential impacts of increased tourism in the area on the Natura 2000 sites should be considered.
Broadlands/The Broadlands		<p>Hard oligo-mesotrophic waters.</p> <p>Natural eutrophic lakes</p> <p>Transition mires and quaking bogs</p> <p>Calcareous fens</p> <p>Alkaline fens</p> <p>Alluvial forests</p>	Natural succession	Reduction of wetland habitats through colonisation and increased sediment input.	The threat of natural succession relates to the management of the Natura 2000 sites to ensure that habitats are maintained. Therefore, it is unlikely that plans listed in Box 5.1 are likely to have an impact on the natural success of Natura 2000 sites.
				<p>Reduction in water levels altering physical properties of specific wetland habitats such as structure, species composition.</p> <p>Reduction in water</p>	At the regional level, the East of England Plan includes proposals for 83,200 new dwellings, of which 45,500 are to be distributed within the Norwich sub-region and Norwich Policy Area (Policy NSR4: housing). It also includes proposals for employment and accompanying infrastructure. The Integrated Regional Strategy and the Sustainable Development Framework for the East of England also promotes housing, employment and

Site	Habitat	Qualifying feature	Threat	Impact	Plans, projects and trends
				quality resulting in changes to species composition and structure.	<p>infrastructure development. The Regional Economic Strategy sets out a projected job growth of 64,700 jobs in the East of England between 2001 and 2021. On the basis of this development, the potential effects on Natura 2000 sites from water abstraction should be considered. Increased abstraction could result in a lowering of surface and groundwater levels locally or further afield.</p> <p>The existing Norfolk Structure Plan makes allowance for the construction of 61,000 new houses in the period 1993 to 2011 in the county, including 11,000 in Breckland, 9,400 in Broadland, 4,700 in Great Yarmouth, 11,000 in King's Lynn and West Norfolk, 7,400 in Norwich and 10,200 in South Norfolk. The Structure Plan also identifies the Norwich Policy Area, Great Yarmouth, King's Lynn, Thetford and Dereham as major locations for economic development. This development will also require additional water abstraction which could result in a lowering of surface and groundwater levels locally or further afield. This should therefore be considered as a potential impact on Natura 2000 sites.</p> <p>Proposals for development within the South Norfolk and City of Norwich Local Plans will also result in increased abstraction which could have a minor indirect impact on Natura 2000 sites.</p> <p>Out of the eight Water Resource Management Units (WRMUs) that make up the Broadland Rivers Catchment Abstraction Management Strategy, there are only three which have rivers with water availability. The remainder either have no water available, are over licensed or over abstracted. The WRMU that covers</p>

Site	Habitat	Qualifying feature	Threat	Impact	Plans, projects and trends
					Norwich Research Park is identified as Over Licensed in the Broadland Rivers Catchment Abstraction Management Strategy. Additional development could increase abstraction which could impact on water availability in the area. This has the potential to have indirectly impact on Natura 2000 sites.
			Eutrophication	Changes in water chemistry and sediment levels, altering species composition of wetland habitats.	<p>Many of the plans at the regional (i.e. the East of England Plan, the Integrated Regional Strategy, the Sustainable Development Framework for the East of England and the Regional Economic Strategy), county (i.e. the Norfolk Structure Plan, the Norfolk Waste Local Plan and the Norfolk Local Transport Plan) and local levels (i.e. the South Norfolk and City of Norwich Local Plans) seek to promote housing, employment and infrastructure development. On the basis of this development, the following potential effects on Natura 2000 sites should be considered:</p> <ul style="list-style-type: none"> • Development will result in urbanisation which will result in diffuse water pollution associated with urban run-off. • Development will generate waste water which will increase demand for its treatment and disposal resulting in reduce water quality. • Development is likely to result in traffic generation and increase the use of the car. This could result in water contamination of nearby water bodies. • The East of England Regional Waste Management Strategy sets out waste management needs in the region. However, development is likely to increase the volume of waste produced which has the potential to contaminate water, e.g. through leachate.

Site	Habitat	Qualifying feature	Threat	Impact	Plans, projects and trends
					These potential risks might however be mitigated by other policies which seek to protect and enhance nature conservation sites in the region and water quality. For example, the Towns and Cities Strategy and Action Plan: Urban Renaissance in the East of England looks to assist in the delivery of development in a sustainable manner and as such may assist in mitigating some of the potential impacts of growth proposals on the Natura 2000 network.
		Fen orchid	Natural succession	Loss of species changes in soil chemistry, and structure, out competing from colonising common species	The threat of natural succession relates to the management of the Natura 2000 sites to ensure that habitats are maintained. Therefore, it is unlikely that plans listed in Box 5.1 are likely to have an impact on the natural success of Natura 2000 sites.
			Eutrophication	Loss of species from changes in soil structure/chemistry	<p>Many of the plans at the regional (i.e. the East of England Plan, the Integrated Regional Strategy, the Sustainable Development Framework for the East of England and the Regional Economic Strategy), county (i.e. the Norfolk Structure Plan, the Norfolk Waste Local Plan and the Norfolk Local Transport Plan) and local levels (i.e. the South Norfolk and City of Norwich Local Plans) seek to promote housing, employment and infrastructure development. On the basis of this development, the following potential effects on Natura 2000 sites should be considered:</p> <ul style="list-style-type: none"> • Development will result in urbanisation which will result in diffuse water pollution associated with urban run-off. • Development will generate waste water which will increase demand for its treatment and disposal resulting in reduce water quality.

Site	Habitat	Qualifying feature	Threat	Impact	Plans, projects and trends
					<ul style="list-style-type: none"> • Development is likely to result in traffic generation and increase the use of the car. This could result in water contamination of nearby water bodies. • The East of England Regional Waste Management Strategy sets out waste management needs in the region. However, development is likely to increase the volume of waste produced which has the potential to contaminate water, e.g. through leachate. <p>These potential risks might however be mitigated by other policies which seek to protect and enhance nature conservation sites in the region and water quality. For example, the Towns and Cities Strategy and Action Plan: Urban Renaissance in the East of England looks to assist in the delivery of development in a sustainable manner and as such may assist in mitigating some of the potential impacts of growth proposals on the Natura 2000 network.</p>
		Desmoulin's whorl snail.	Natural succession	Loss of designated species through change in habitat composition, loss of suitable vegetation.	The threat of natural succession relates to the management of the Natura 2000 sites to ensure that habitats are maintained. Therefore, it is unlikely that plans listed in Box 5.1 are likely to have an impact on the natural success of Natura 2000 sites.
			Abstraction	Loss of designated species through drying, change in habitat composition, loss of suitable vegetation.	At the regional level, the East of England Plan includes proposals for 83,200 new dwellings, of which 45,500 are to be distributed within the Norwich sub-region and Norwich Policy Area (Policy NSR4: housing). It also includes proposals for employment and accompanying infrastructure. The Integrated Regional Strategy and the Sustainable Development Framework for the East of England also promotes housing, employment and infrastructure development. The Regional Economic Strategy sets out a projected job growth of 64,700 jobs

Site	Habitat	Qualifying feature	Threat	Impact	Plans, projects and trends
					<p>in the East of England between 2001 and 2021. On the basis of this development, the potential effects on Natura 2000 sites from water abstraction should be considered. Increased abstraction could result in a lowering of surface and groundwater levels locally or further afield.</p> <p>The existing Norfolk Structure Plan makes allowance for the construction of 61,000 new houses in the period 1993 to 2011 in the county, including 11,000 in Breckland, 9,400 in Broadland, 4,700 in Great Yarmouth, 11,000 in King's Lynn and West Norfolk, 7,400 in Norwich and 10,200 in South Norfolk. The Structure Plan also identifies the Norwich Policy Area, Great Yarmouth, King's Lynn, Thetford and Dereham as major locations for economic development. This development will also require additional water abstraction which could result in a lowering of surface and groundwater levels locally or further afield. This should therefore be considered as a potential impact on Natura 2000 sites.</p> <p>Proposals for development within the South Norfolk and City of Norwich Local Plans will also result in increased abstraction which could have a minor indirect impact on Natura 2000 sites.</p> <p>Proposals for development within the South Norfolk and City of Norwich Local Plans will also result in increased abstraction which could have a minor indirect impact on Natura 2000 sites.</p> <p>Out of the eight Water Resource Management Units (WRMUs) that make up the Broadland Rivers Catchment Abstraction Management Strategy, there are only three which have rivers with water availability. The</p>

Site	Habitat	Qualifying feature	Threat	Impact	Plans, projects and trends
					remainder either have no water available, are over licensed or over abstracted. The WRMU that covers Norwich Research Park is identified as Over Licensed in the Broadland Rivers Catchment Abstraction Management Strategy. Additional development could increase abstraction which could impact on water availability in the area. This has the potential to have indirectly impact on Natura 2000 sites.
		<p>Bittern, marsh harrier and hen harrier</p> <p>Overwintering bewick's swan, ruff, whooper swan, gadwall, pink footed goose, and shoveler</p>	Disturbance	Reduction of breeding success from displacement of breeding birds between March-August	<p>Many of the plans at the regional (i.e. the East of England Plan, the Integrated Regional Strategy, the Sustainable Development Framework for the East of England and the Regional Economic Strategy), county (i.e. the Norfolk Structure Plan, the Norfolk Waste Local Plan and the Norfolk Local Transport Plan) and local levels (i.e. the South Norfolk and City of Norwich Local Plans) seek to promote housing, employment and infrastructure development. On the basis of this, the potential recreational effects from new development within close proximity (5kn) of Natura 2000 sites should be considered. Increased recreation could disturb qualifying features of The Broads/ Broadlands.</p> <p>Many of the plans also seek to promote tourism in the area. For example, Policy NSR2 (Promoting the tourism sector) of the East of England Plan seeks to encourage tourism and highlights the role of the Norwich Sub-Region as a gateway to the broads. The potential impacts of increased tourism in the area on the Natura 2000 sites should be considered.</p>
			Abstraction	Reduction in number of breeding pairs from loss of mating, nesting,	At the regional level, the East of England Plan includes proposals for 83,200 new dwellings, of which 45,500 are to be distributed within the Norwich sub-region and

Site	Habitat	Qualifying feature	Threat	Impact	Plans, projects and trends
				feeding habitat.	<p>Norwich Policy Area (Policy NSR4: housing). It also includes proposals for employment and accompanying infrastructure. The Integrated Regional Strategy and the Sustainable Development Framework for the East of England also promotes housing, employment and infrastructure development. The Regional Economic Strategy sets out a projected job growth of 64,700 jobs in the East of England between 2001 and 2021. On the basis of this development, the potential effects on Natura 2000 sites from water abstraction should be considered. Increased abstraction could result in a lowering of surface and groundwater levels locally or further afield.</p> <p>The existing Norfolk Structure Plan makes allowance for the construction of 61,000 new houses in the period 1993 to 2011 in the county, including 11,000 in Breckland, 9,400 in Broadland, 4,700 in Great Yarmouth, 11,000 in King's Lynn and West Norfolk, 7,400 in Norwich and 10,200 in South Norfolk. The Structure Plan also identifies the Norwich Policy Area, Great Yarmouth, King's Lynn, Thetford and Dereham as major locations for economic development. This development will also require additional water abstraction which could result in a lowering of surface and groundwater levels locally or further afield. This should therefore be considered as a potential impact on Natura 2000 sites.</p> <p>Proposals for development within the South Norfolk and City of Norwich Local Plans will also result in increased abstraction which could have a minor indirect impact on Natura 2000 sites.</p> <p>Proposals for development within the South Norfolk</p>

Site	Habitat	Qualifying feature	Threat	Impact	Plans, projects and trends
					<p>and City of Norwich Local Plans will also result in increased abstraction which could have a minor indirect impact on Natura 2000 sites.</p> <p>Out of the eight Water Resource Management Units (WRMUs) that make up the Broadland Rivers Catchment Abstraction Management Strategy, there are only three which have rivers with water availability. The remainder either have no water available, are over licensed or over abstracted. The WRMU that covers Norwich Research Park is identified as Over Licensed in the Broadland Rivers Catchment Abstraction Management Strategy. Additional development could increase abstraction which could impact on water availability in the area. This has the potential to have indirectly impact on Natura 2000 sites.</p>
			Eutrophication	<p>Reduction in breeding success from contamination/pollution of habitat resulting in reduction of food items.</p> <p>Reduction in water quality resulting in changes to species composition and structure</p>	<p>Many of the plans at the regional (i.e. the East of England Plan, the Integrated Regional Strategy, the Sustainable Development Framework for the East of England and the Regional Economic Strategy), county (i.e. the Norfolk Structure Plan, the Norfolk Waste Local Plan and the Norfolk Local Transport Plan) and local levels (i.e. the South Norfolk and City of Norwich Local Plans) seek to promote housing, employment and infrastructure development. On the basis of this development, the following potential effects on Natura 2000 sites should be considered:</p> <ul style="list-style-type: none"> • Development will result in urbanisation which will result in diffuse water pollution associated with urban run-off. • Development will generate waste water which will increase demand for its treatment and disposal

Site	Habitat	Qualifying feature	Threat	Impact	Plans, projects and trends
					<p>resulting in reduce water quality.</p> <ul style="list-style-type: none"> • Development is likely to result in traffic generation and increase the use of the car. This could result in water contamination of nearby water bodies. • The East of England Regional Waste Management Strategy sets out waste management needs in the region. However, development is likely to increase the volume of waste produced which has the potential to contaminate water, e.g. through leachate. <p>These potential risks might however be mitigated by other policies which seek to protect and enhance nature conservation sites in the region and water quality. For example, the Towns and Cities Strategy and Action Plan: Urban Renaissance in the East of England looks to assist in the delivery of development in a sustainable manner and as such may assist in mitigating some of the potential impacts of growth proposals on the Natura 2000 network.</p>

6. SCREENING ASSESSMENT OF THE NRP DEVELOPMENT BRIEF SPD

INTRODUCTION

- 6.1. An assessment has been undertaken to identify potential significant impacts of the (draft) NRP Development Brief SPD upon the integrity of the Natura 2000 network, and in particular the three selected sites which were the focus of the assessment. This assessment is shown in **Table 6.1**, which sets out possible impacts of the Development Brief on Natura 2000 sites, their risk of affecting the integrity of the sites (particularly in relation to the designated interest features and Conservation Objectives), and subsequent recommendations for alterations to the Development Brief which may make it possible to avoid any potential adverse impacts.

ASSESSMENT SUMMARY

- 6.2. The range of principles set out in the (draft) NRP Development Brief SPD and the distance of the site from the proposed NRP extension is considered appropriate to avoid the majority of potential impacts on Natura 2000 sites. However, in applying the precautionary approach, a potential impact upon the Broads Natura 2000 site was identified. This relates to alterations to water quality of the site associated with the construction phase of the NRP extension.

RECOMMENDATIONS

- 6.3. To reduce the chance of water quality impacts on The Broads Natura 2000 and Ramsar site, it is recommended that the sensitivity associated with the River Yare is referred to within the Development Brief, and that the requirements for environmental protection are discussed.
- 6.4. Specific recommendations are as follows:

Part 1: Background: Key environmental constraints and drivers.

Insert text 'Both areas lie within the River Yare floodplain which may be vulnerable to contamination during construction'.

Part 2: Towards an illustrative masterplan for the Core Area: Habitats

Insert text 'The River Yare is located some 200 m to the east of the core area at the closest points'.

Part 3: Plot Specific Guidance – Core area: Key environmental constraints and drivers.

Insert text 'including to prevent significant impacts upon the River Yare'.

Part 4: Design Principles Specific to Colney Hall: Valued Habitats.

Insert text 'The River Yare is immediately adjacent to the land allocated for development, although the actual development lies over 100 from the river'.

Table 6.1: Assessment of the impact of the (draft) NRP Development Brief SPD on the integrity of the Natura 2000 sites, including in-combination with other plans and projects.

Natura 2000 site	Designated interest feature(s)	Features supporting site integrity in relation to Conservation Objectives and Favourable Condition	Possible impacts from other plans and projects	Possible impacts from the SPD	Risk of effect on site integrity?	Amendments recommended to ensure any potential adverse effects on Natura 2000 sites are avoided
The Broads/ Broadlands SAC, SPA, Ramsar site	<ul style="list-style-type: none"> • Hard Oligomesotrophic waters with benthic vegetation. • Natural eutrophic lakes. • Transition mires and quaking bogs. • Calcareous fens. • Alkaline fens. • Alluvial forests. • Fen orchid. • Desmoulin's whorl snail. • Bittern, marsh harrier and hen harrier. • Overwintering bewick's swan, ruff, whooper swan, gadwall, pink footed goose, and shoveler. 	<ul style="list-style-type: none"> • Extent of habitat. • Wetland habitat quality, structure and diversity. • Appropriate hydrological processes • Disturbance • Food availability 	<ul style="list-style-type: none"> • Plans that promote housing, employment and infrastructure development could reduce the quality of local water bodies. Development will result in urbanisation which will increase diffuse water pollution from run-off, traffic generation, and increases in waste production. It will also generate waste water which will increase demand for its treatment and disposal. • Proposals for housing, employment and accompanying infrastructure are likely to increase demand for water abstraction. Increased abstraction could result in a lowering of surface and groundwater levels locally or further afield. • There are potential recreational effects from new development within close proximity (5km) of Natura 2000 sites. 	<ul style="list-style-type: none"> • Risk of water contamination of River Yare from activities associated with construction phase of development. 	<ul style="list-style-type: none"> • In line with precautionary principle potential impacts upon water quality have been identified. 	<ul style="list-style-type: none"> • Refer in Development Brief to the River Yare and requirements for best construction practice to avoid impacts.

Natura 2000 site	Designated interest feature(s)	Features supporting site integrity in relation to Conservation Objectives and Favourable Condition	Possible impacts from other plans and projects	Possible impacts from the SPD	Risk of effect on site integrity?	Amendments recommended to ensure any potential adverse effects on Nature 2000 sites are avoided
Norfolk Valley Fens SAC	<ul style="list-style-type: none"> Alkaline fens. Narrow-mouthed whorl snail. Desmoulin's whorl snail. 	<ul style="list-style-type: none"> Extent of habitat. Wetland habitat quality, structure and diversity. Appropriate hydrological processes. 	<ul style="list-style-type: none"> Proposals for housing, employment and accompanying infrastructure are likely to increase demand for water abstraction. Increased abstraction could result in a lowering of surface and groundwater levels locally or further afield. 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Negligible 	<ul style="list-style-type: none"> None
River Wensum SAC	<ul style="list-style-type: none"> Water courses of plain to montane level. White-clawed crayfish. 	<ul style="list-style-type: none"> Extent of habitat. Wetland habitat quality, structure and diversity. Appropriate hydrological processes. Absence of introduced species. 	<ul style="list-style-type: none"> Plans that promote housing, employment and infrastructure development could reduce the quality of local water bodies. Development will result in urbanisation which will increase diffuse water pollution from run-off, traffic generation, and increases in waste production. It will also generate waste water which will increase demand for its treatment and disposal. Proposals for housing, employment and accompanying infrastructure are likely to increase demand for water abstraction. Increased abstraction could result in a lowering of surface and groundwater levels locally or further afield. 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Negligible 	<ul style="list-style-type: none"> None

Natura 2000 site	Designated interest feature(s)	Features supporting site integrity in relation to Conservation Objectives and Favourable Condition	Possible impacts from other plans and projects	Possible impacts from the SPD	Risk of effect on site integrity?	Amendments recommended to ensure any potential adverse effects on Nature 2000 sites are avoided
			<ul style="list-style-type: none"> There are potential recreational effects from new development within close proximity (5km) of Natura 2000 sites. 			

7. CONCLUSIONS AND NEXT STEPS

- 7.1. This Appropriate Assessment Screening Report considered the (draft) NRP Development Brief SPD for its potential to affect Natura 2000 sites. The sensitivities of relevant Natura 2000 sites were identified with particular consideration given to impacts on water quantity and quality. Given the nature of the development detailed in the Development Brief, when considered in the context of other relevant plans, and applying the precautionary principle, it is considered unlikely that proposals will have significant effects on the integrity of the Natura 2000 sites.
- 7.2. In accordance with The Nature Conservation (Natural Habitats, &c) Regulations, Natural England will be consulted on this Appropriate Assessment Screening Report to obtain their views on the likely effects of the Development Brief on the Natura (2000) network. A final Screening Report will then be prepared, taking account of Natural England's response to the consultation.
- 7.3. If it is agreed, following consultation with Natural England, that further Appropriate Assessment is not required, then it is suggested that South Norfolk County Council make the final Appropriate Assessment Screening Report available to the public to provide an opportunity for the public to consider the Screening Report before the SPD is adopted.

Land Use Consultants
12th December 2006

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APPENDIX I

Review of other relevant plans and projects

Document	Overall aim or purpose of the document
Regional level plans	
East of England	
East of England Plan, Draft revision to the Regional Spatial Strategy (RSS) for the East of England (2006) – Panel Report (including the Regional Transport Strategy for the East of England)	This document sets out the East of England Plan, a draft spatial strategy to guide development in the East of England for at least the next 20 years and sets out plans on housing, economic development, the environment, transport, sport and recreation, waste development, mineral extraction.
Integrated Regional Strategy (2005)	<p>'The integrated Regional Strategy (IRS) presents a Vision and a series of high level outcomes for the East of England. The high level outcomes for the IRS are:</p> <ul style="list-style-type: none"> • 'An exceptional knowledge base and a dynamic economy in the Region. • Opportunities for everyone to contribute to – and benefit from – the Region's economic dynamism. • Strong, inclusive, healthy and culturally rich communities. • A high quality and diverse natural and built environment. • A more resource-efficient region.' <p>The IRS brings together the regional strategies for the East of England into a inter-related series of strategies and highlights the key issues arising from proposals within each.</p>
East of England Regional Waste Management Strategy (2002)	The Regional Waste Management Strategy give guidance on the land use planning aspects of waste management, by considering what quantities of waste needs to be treated by different methods, and what this means in terms of the scale of waste management needs, up to 2021.
Sustainable Development Framework for the East of England (2001)	<p>The Sustainable Development Framework (RSDF) represents the region's response to the 1999 UK Sustainable Development Strategy 'A Better Quality of Life'.</p> <p>It is a template for guiding partner organisations in the region when drawing up their own Strategies and Action Plans. In particular, its relationship with Regional Planning Guidance, the East of England Development Agency's Regional Economic Strategy, other Integrated Regional and Local Authority strategies is crucial.</p> <p>The central aim of the partners is to improve the quality of life for all the people of the region.</p>
Sustainable Communities in the East of England – Building for the future (2004)	Long-term programme for action for delivering sustainable communities in both urban and rural areas. It aims to tackle housing supply issues in the South East, low demand in other parts of the country, and the quality of our public spaces.

Document	Overall aim or purpose of the document
A Shared Vision: the regional economic strategy for the East of England (2004)	As an economic strategy, the RES focuses on issues of growth, business and prosperity (measured in GVA). Regional planning, transport, the environment etc. are thus viewed here in the context of being a party to this growth / expansion of the region's economy – with growth being the central and overarching aim.
Revised Regional Housing Strategy for the East of England: Strategy Document 2005-2010 (2005)	<p>The Regional Housing Strategy sets out a vision, strategic aims, and objectives to guide the provision of housing in the Region. Key issues addressed by the Strategy include, providing the right amount of homes, of the right types, in the right place and at the right price, to meet regional needs.</p> <p>Proposals for housing under the Regional Housing Strategy for the East of England have been superseded by housing proposals set out in the (Draft) East of England Plan.</p>
Towns and Cities Strategy and Action Plan: Urban Renaissance in the East of England	This strategy and action plan is the East of England's response to the national policy as set out in the Urban White Paper and the Sustainable Communities Plan. Across the whole region, the strategy strives to make the most of the vital assets that are the region's towns and cities – and the people who live, work, play and invest in them. Its purpose is to bring about urban renaissance in the East of England.
'Our Environment, Our Future' The Regional Environmental Strategy for the East of England (2003)	<p>This Regional Environment Strategy is based on a vision of a prosperous and socially inclusive East of England that recognises the value of the environment as an integral part of the region's current and future sustainable development:</p> <p>"The Strategy sets out an ambitious agenda for celebrating, protecting and enhancing our natural, historic and built environment. It highlights the importance of the environment to the broader improvement of quality of life for everyone in the region.</p>
Woodland for Life Regional Woodland Strategy for the East of England (2004)	The Regional Woodland Strategy for the East of England provides a number of strategies for the enhancement, over the next 20 years, of the benefits that trees and woodlands bring to the people who live and work in the region. With the active participation of woodland owners, the woodlands and trees of the East of England provide a wide range of benefits that have been divided into six broad themes: quality of life, spatial planning, economic development, renewable energy, education and learning, and natural environment. The Strategy has been drafted to reflect these six themes. The basis of all themes is sustainable woodland management.

Document	Overall aim or purpose of the document
County level plans	
Norfolk	
Norfolk Structure Plan 2003 (Adopted 1999)	The Norfolk Structure Plan provides the strategic land use planning framework to take Norfolk into the first decade of the new millennium. The overall aim of the Structure Plan is to promote the economic and social health of the urban and rural areas and to conserve and enhance Norfolk's environment and resources for the benefit of current and future generations.
Norfolk Waste Local Plan (2004, final publication pending)	<p>Main objectives:</p> <ul style="list-style-type: none"> • Move the treatment and management of waste higher up the waste hierarchy and encourage reduction, re-use, recycling • Ensure waste is recovered or disposed of without endangering human health or harming the environment • Make suitable provision for the management of waste in the County • Safeguard waste management sites from incompatible development • Provide effective planning control over waste management facilities • Ensure regional self sufficiency
Norfolk Local Transport Plan 2006-2011	<p>The vision of the Local Transport Plan (2006-2011) is described as 'Norfolk is a well-connected place in which to live and do business and to visit, and is known as a national leader in making the transport system safer and reducing the impact transport has on climate change and the wider environment.'</p> <p>The strategic approach of the Plan is to reduce the need to travel and help people and businesses get where they need to get to, enabling them to do this in a more sustainable way, while reducing congestion, protecting and enhancing the environment, and improving road safety. Care was taken to ensure that private car travel is made an integral part of our approach to sustainable travel by encouraging the use of alternative fuels and low emissions vehicles.</p>
Local level plans	
South Norfolk	
Local plan (2003)	The South Norfolk Local Plan is the framework for guiding, controlling and facilitating development within the District.
City of Norwich	
City of Norwich Replacement Local Plan (November 2004)	The Local Plan provides guidance for developers and the Council's own development control service on where and what kind of development may be

Document	Overall aim or purpose of the document
	where and what kind of development may be permitted, for the period up to 2011.
Water Resource Plans and Catchment Abstraction Management Plans	
Anglian Water Resources Plan (2004)	Anglian Water's Water Resources Plan details how Anglian Water plans to balance water supply with demand to ensure a secure supply for all their customers in one of the driest regions of the country. The plan looks forward as far as 2030 and details specific measures that will be implemented over this period.
Essex and Suffolk Water Resources Plan (2005)	The Essex and Suffolk Water Resources Plan takes a long-term outlook forecasting demand for water over a 25 year period. The current plan looks ahead to 2030 outlining what Essex and Suffolk Water is doing to manage increasing demand for water.
Broadland Rivers Catchment Abstraction Management Strategy (Environment Agency, 2006)	The Broadland Rivers CAMS sets out a strategy to manage water resources sustainably over the next six years in the Broadland rivers catchments. The document provides guidance for existing abstractors and new applicants setting out how water will be managed to ensure that it is available for abstraction whilst protecting the needs of the natural environment.