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HRA of Basildon Borough Draft Local Plan

Prepared for Basildon Borough Council

Prepared by LUC
December 2015

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1 Introduction

- 1.1 Basildon Borough Council ('the Council') is preparing a new Local Plan to replace the policies in the 2007 Saved Policies from the Basildon District Plan, adopted in 1998, and to set out an overall framework for the development of the Borough up to 2034.
- 1.2 LUC has been appointed by the Council to undertake Habitats Regulations Assessment (HRA) of the emerging Local Plan on its behalf. This HRA Report relates to the 'Draft Local Plan' which sets out an initial draft of a new Local Plan for Basildon Borough. It has been prepared for the purposes of consultation under Regulation 18 of the Town and Country Planning (Local Planning) (England) Regulations 2012. This report should therefore be read in conjunction with that document.

Background to the preparation of the new Local Plan

- 1.3 In December 2014, the Council's Cabinet agreed to commence work on a Local Plan for the Borough. Prior to that, the Council had been working on the preparation of a Local Development Framework comprising a suite of three documents: A Core Strategy; a Site Allocations and Development Management Policies Document; and a Gypsy, Traveller and Travelling Showpeople Policies Document. At that time, work had only been undertaken on the Core Strategy.
- 1.4 The Core Strategy was intended to set out the Borough-wide strategy for the coordination of development until 2031. It set out the Council's Spatial Vision and Strategic Objectives, and the Spatial Strategy and Strategic Policies for delivering these. The Core Strategy had been through several iterations, the most recent of which was the *Core Strategy Revised Preferred Options Report*. This was the subject of consultation from January to March 2014.
- 1.5 The consultation on the *Core Strategy Revised Preferred Options Report* gave rise to over 10,000 consultation comments addressing a range of issues. A key issue arising from these comments was the need for more detail to be provided around the allocation of land to meet the need for development and change going forward, and the infrastructure required to support such growth. To address this, a comprehensive approach to plan-making which incorporated not only the preparation of a spatial strategy and strategic policies, but also the allocation of land and the preparation of development management policies was identified as a mechanism by which this additional detail could be provided to the satisfaction of consultees. This gave rise to the change of approach taken in December 2014.
- 1.6 It was also initially proposed that policies regarding the accommodation needs of gypsies, travellers and travelling showpeople would be set out in a separate document. However, it could be considered that this would constitute discrimination, and could potentially be contrary to the public equality duty set out in the Equalities Act 2010. As such, policies relating to meeting the needs of gypsies, travellers and travelling showpeople are also included within the draft New Local Plan.

The requirement to undertake Habitats Regulations Assessment of Development Plans

- 1.7 The requirement to undertake HRA of development plans was confirmed by the amendments to the Habitats Regulations published for England and Wales in July 2007 and updated in 2010¹ and

¹ The Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007. HMSO Statutory Instrument 2007 No. 1843. From 1 April 2010, these were consolidated and replaced by the Conservation of Habitats and Species Regulations 2010 (SI No. 2010/490). Note that no substantive changes to existing policies or procedures have been made in the new version.

again in 2012². Therefore when preparing the new Local Plan, the Council is required by law to carry out an HRA although consultants can undertake the HRA on its behalf. The requirement for authorities to comply with the Habitats Regulations when preparing a Local Plan is explained in the online National Planning Practice Guidance (NPPG).

- 1.8 The HRA refers to the assessment of the potential effects of a development plan on one or more Natura 2000 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)³, candidate SACs (cSACs)⁴, Sites of Community Importance (SCIs)⁵ 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 HRA, these designations can be collectively referred to as European sites, despite Ramsar designations being at the international level. The term 'European site' is interchangeable with the term 'Natura 2000 site' in the context of HRA. The former term is used throughout this report.
- 1.11 The overall purpose of the HRA is to conclude whether or not a proposal or policy, or whole development plan, would adversely affect the integrity of the site in question either alone or in combination with other plans. This is judged in terms of the implications of the plan for a site's 'qualifying features' (i.e. those Annex I habitats, Annex II species, and Annex I bird populations for which it has been designated). Significantly, HRA is based on the precautionary principle meaning that where uncertainty or doubt remains, an adverse impact should be assumed.

Stages of the Habitats Regulations Assessment

- 1.12 **Table 1.1** summarises the stages involved in carrying out a full HRA, based on various guidance documents^{6,7,8}.

Table 1.1 Stages in HRA

Stage	Task	Outcome
Stage 1: Screening (the 'Significance Test')	Description of the plan. Identification of potential effects on European sites. Assessing the effects on European sites (taking into account potential mitigation provided by other policies in the plan).	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	Gather information (plan and	Appropriate Assessment report

² The Conservation of Habitats and Species (Amendment) Regulations 2012. Statutory Instrument 2012 No. 1927.

³ Potential SPAs are sites that have been approved by Government and are currently in the process of being classified as SPAs.

⁴ Candidate SACs are sites that have been submitted to the European Commission, but not yet formally adopted.

⁵ SCIs are sites that have been adopted by the European Commission but not yet formally designated as SACs by the Government.

⁶ *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.* European Commission Environment DG, November 2001.

⁷ *Planning for the Protection of Natura 2000 sites. Guidance for Regional Spatial Strategies and Local Development Documents.* Department for Communities and Local Government (DCLG), August 2006.

⁸ *The Appropriate Assessment of Spatial Plans in England. A guide to why, when and how to do it.* RSPB. August 2007.

Stage	Task	Outcome
Assessment (the 'Integrity Test')	European sites). Impact prediction. Evaluation of impacts in view of conservation objectives. Where impacts considered to affect qualifying features, identify alternative options. Assess alternative options. If no alternatives exist, define and evaluate mitigation measures where necessary.	describing the plan, European site baseline conditions, the adverse effects of the plan on the European site, how these effects will be avoided through, firstly, avoidance, and secondly, mitigation including the mechanisms and timescale for these mitigation measures. If effects remain after all alternatives and mitigation measures have been considered proceed to Stage 3.
Stage 3: Assessment where no alternatives exist and adverse impacts remain taking into account mitigation	Identify and demonstrate 'imperative reasons of overriding public interest' (IROPI). Demonstrate no alternatives exist. Identify potential compensatory measures.	This stage should be avoided if at all possible. The test of IROPI and the requirements for compensation are extremely onerous.

1.13 In assessing the effects of the Basildon Borough Local Plan in accordance with Regulation 102 of the Conservation of Habitats and Species Regulations 2012, there are potentially two tests to be applied by the competent authority: a 'Significance Test', followed if necessary by an Appropriate Assessment which will inform the 'Integrity Test'. The relevant sequence of questions is as follows:

- Step 1: Under Reg. 102(1)(b), consider whether the plan is directly connected with or necessary to the management of the sites. If not, proceed to Step 2.
- Step 2: Under Reg. 102(1)(a) consider whether the plan is likely to have a significant effect on the site, either alone or in combination with other plans or projects (the 'Significance Test'). *[These two steps are undertaken as part of Stage 1: Screening shown in Table 1.1 above.]* If so, proceed to Step 3.
- Step 3: Under Reg. 102(1), make an Appropriate Assessment of the implications for the site in view of its current conservation objectives (the 'Integrity Test'). In so doing, it is mandatory under Reg. 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 above.]*
- 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 will not adversely affect the integrity of the European site.

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

1.15 The HRA should be undertaken by the 'competent authority' - in this case Basildon Borough 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 body⁹ in order to obtain the necessary information and agree the process, outcomes and any mitigation proposals. The Environment Agency, while not a statutory consultee for the HRA, is also in a

⁹ Regulation 5 of *The Conservation of Habitats and Species Regulations 2010*. HMSO Statutory Instrument 2010 No. 490.

strong position to 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 for the Core Strategy

- 1.16 As described above, the Basildon Borough Core Strategy reached a late stage in its development before being withdrawn, and the Core Strategy was subject to HRA by LUC throughout its development. The most recent HRA Report for the Core Strategy was produced in January 2014 in relation to the Preferred Options draft of the Core Strategy.
- 1.17 Therefore, there is already a body of relatively recent HRA work which has been drawn on, where relevant, to inform the HRA of the Local Plan. The HRA of the new Local Plan is, however, being carried out as a separate process to the earlier HRA of the Core Strategy and any information drawn from the HRA of the Core Strategy has been fully reviewed and updated where necessary.

Structure of this report

- 1.18 This chapter (**Chapter 1**) has described the background to the production of the Basildon Borough Local Plan and the requirement to undertake HRA. The remainder of the report is structured into the following sections:
- **Chapter 2: The Local Plan** summarises the content of the Draft Local Plan which is the subject of this HRA report.
 - **Chapter 3: HRA Screening methodology** sets out the approach taken and the tasks carried out during the screening stage of the HRA.
 - **Chapter 4: HRA Screening assessment** summarises the findings of the HRA Screening and concludes as to whether significant effects on European sites are likely to result from the implementation of the Draft Local Plan.
 - **Chapter 5: Conclusions** summarises the HRA conclusions for the Draft Local Plan and describes the next steps to be undertaken.

2 The Local Plan

- 2.1 The Local Plan will comprise the full suite of strategic policies, allocation policies and development management policies. The current draft for Regulation 18 consultation requires different policy options to be made available for consultation purposes in order to ensure that the final plan is the most appropriate. As such, it contains some sections and text that will not be included within the finalised version of the new Local Plan. For example, the section entitled *Preparing a new Local Plan* will not feature in the version of the plan which is submitted for examination but is included in the Regulation 18 draft to provide a context for the consultation. Additionally, the grey *Alternative Options* boxes which follow each proposed policy will also be omitted from the submission version. The HRA has not considered the sections of the Regulation 18 draft Local Plan that will not feature in the version submitted for examination.
- 2.2 The Basildon Renaissance Partnership comprises the Council and other public, private and voluntary sector organisations with the aim of coordinating activities which secure a better economic, social and environmental future for Basildon Borough. The partnership has a shared, long-term vision for Basildon Borough as follows:

Basildon Borough Community Strategy Vision 2012 - 2036

To make Basildon Borough a fair and inclusive place, where communities have a healthy, safe place to live and work and to improve the quality of life now and for future generations.

- 2.3 In order to deliver the spatial requirements of the Basildon Borough Vision, ten Strategic Objectives have been established for the Local Plan as follows:
- SO1: Protecting and enhancing the quality of the local environment.
 - SO2: Improve the quality and value of the Green Belt.
 - SO3: Minimise our impact on the environment.
 - SO4: Creating vibrant and thriving town centres.
 - SO5: Strengthening the competitiveness of the local economy.
 - SO6: Delivering new homes.
 - SO7: Capitalising on local tourism opportunities.
 - SO8: Helping local people maintain healthier lifestyles.
 - SO9: Enhancing the quality of life for all.
 - SO10: Securing the delivery of supporting infrastructure
- 2.4 The Local Plan policies to deliver the Strategic Objectives are then arranged thematically to replicate the chapters in the NPPF, where they apply in Basildon Borough. Within each chapter, strategic policies are followed by allocations policies (where appropriate), and then development management policies. The thematic chapters are:
- Achieving sustainable development.
 - Economic development.
 - Ensuring the vitality of town centres.
 - Transport.
 - Supporting the high quality communications infrastructure.
 - Housing.
 - Requiring good design.

- Promoting healthy communities.
- Protecting Green Belt land.
- Meeting the challenge of climate change and flooding.
- Conserving and enhancing the natural environment.
- Conserving and enhancing the historic environment.

2.5 The final section of the Draft Local Plan then sets out arrangements for implementation, monitoring and review of the thematic policies.

Potential impacts of the Local Plan on European sites

2.6 **Table 2.1** below sets out the range of potential impacts that development in general and related activities may have on European sites.

Table 2.1 Potential impacts and activities adversely affecting Natura 2000 sites

Broad categories and examples of potential impacts on Natura 2000 sites	Examples of activities responsible for impacts
Physical loss Removal (including offsite effects, e.g. foraging habitat) Mine collapse Smothering Habitat degradation	Development (e.g. housing, employment, infrastructure, tourism) Infilling (e.g. of mines, water bodies) Alterations or works to disused quarries Structural alterations to buildings (bat roosts) Afforestation Tipping Cessation of or inappropriate management for nature conservation
Physical damage Sedimentation / silting Prevention of natural processes Habitat degradation Erosion Trampling Fragmentation Severance / barrier effect Edge effects Fire	Flood defences Dredging Mineral extraction Recreation (e.g. motor cycling, cycling, walking, horse riding, water sports, caving) Development (e.g. infrastructure, tourism, adjacent housing etc.) Vandalism Arson Cessation of or inappropriate management for nature conservation
Non-physical disturbance Noise Vibration Visual presence Human presence Light pollution	Development (e.g. housing, industrial) Recreation (e.g. dog walking, water sports) Industrial activity Mineral extraction Navigation Vehicular traffic Artificial lighting (e.g. street lighting)

Broad categories and examples of potential impacts on Natura 2000 sites	Examples of activities responsible for impacts
<p>Water table/availability</p> <p>Drying</p> <p>Flooding / stormwater</p> <p>Water level and stability</p> <p>Water flow (e.g. reduction in velocity of surface water)</p> <p>Barrier effect (on migratory species)</p>	<p>Water abstraction</p> <p>Drainage interception (e.g. reservoir, dam, infrastructure and other development)</p> <p>Increased discharge (e.g. drainage, runoff)</p>
<p>Toxic contamination</p> <p>Water pollution</p> <p>Soil contamination</p> <p>Air pollution</p>	<p>Agrochemical application and runoff</p> <p>Navigation</p> <p>Oil / chemical spills</p> <p>Tipping</p> <p>Landfill</p> <p>Vehicular traffic</p> <p>Industrial waste / emissions</p>
<p>Non-toxic contamination</p> <p>Nutrient enrichment (e.g. of soils and water)</p> <p>Algal blooms</p> <p>Changes in salinity</p> <p>Changes in thermal regime</p> <p>Changes in turbidity</p> <p>Air pollution (dust)</p>	<p>Agricultural runoff</p> <p>Sewage discharge</p> <p>Water abstraction</p> <p>Industrial activity</p> <p>Flood defences</p> <p>Navigation</p> <p>Construction</p>
<p>Biological disturbance</p> <p>Direct mortality</p> <p>Out-competition by non-native species</p> <p>Selective extraction of species</p> <p>Introduction of disease</p> <p>Rapid population fluctuations</p> <p>Natural succession</p>	<p>Development (e.g. housing areas with domestic and public gardens)</p> <p>Predation by domestic pets</p> <p>Introduction of non-native species (e.g. from gardens)</p> <p>Fishing</p> <p>Hunting</p> <p>Agriculture</p> <p>Changes in management practices (e.g. grazing regimes, access controls, cutting/clearing)</p>

3 HRA Screening methodology

- 3.1 HRA Screening of the Basildon Borough Draft Local Plan has been undertaken in line with current guidance and seeks to meet the requirements of the Habitats Regulations. The tasks that have been undertaken during the Screening stage of the HRA are described in detail below.

Identification of European sites and factors contributing to their integrity

- 3.2 During the HRA of the now-withdrawn Core Strategy, an initial investigation was undertaken to identify the European sites within or adjacent to the Basildon Borough boundary which may be affected by development. This involved the use of GIS data to map the locations and boundaries of European sites using publicly available data from Natural England.
- 3.3 All European sites lying partially or wholly within 15 km from the Borough boundary were included in the HRA of the Core Strategy to reflect the fact that development resulting from a plan may affect European sites which are located outside the administrative boundary of the plan area. This distance has generally been considered reasonable by Natural England in other Local Plan HRAs to ensure that all designated sites that could potentially be affected by development are identified and included in the assessment. A number of additional European sites beyond the 15 km buffer for which a pathway for potential effects exists were also identified. The same approach has been adopted in identifying the European sites that may be affected by the Draft Local Plan.
- 3.4 European sites within 15 km of the Basildon Borough boundary are as follows:
- Benfleet and Southend Marshes SPA and Ramsar site.
 - Blackwater Estuary (Mid-Essex Coast Phase 4) SPA and Ramsar site.
 - Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site.
 - Essex Estuaries SAC
 - Medway Estuary & Marshes SPA and Ramsar site.
 - Thames Estuary & Marshes SPA and Ramsar site.
- 3.5 Three additional European sites beyond the 15 km buffer were also considered in relation to the potential for water abstraction to serve the development proposed by the Local Plan to adversely affect water availability and flow regimes. This was on the basis that the South Essex Water Cycle Study indicates that the water available to all three of these sites could be affected by abstraction to supply the Essex Resource Zone of which Basildon Borough is part:
- Abberton Reservoir SPA and Ramsar site.
 - Colne Estuary (Mid-Essex Coast Phase 2) SPA and Ramsar Site.
 - Stour and Orwell Estuaries SPA and Ramsar site.
- 3.6 All of the European sites above are shown in **Figure 3.1**. Other types of significant effect on other European sites lying more than 15 km from the Borough boundary are not considered likely because of the distances between the Plan's proposals and the European sites and/or the absence of pathways along which such effects could occur. These other European sites are not shown on **Figure 3.1**. Descriptions of the scoped-in European sites listed above, their designated features and factors affecting their integrity are provided in **Appendix 1**.

Assessment of 'likely significant effects' of the Local Plan

- 3.7 As required under Regulation 102 of the Conservation of Habitats and Species Regulations 2010¹⁰ an assessment has been undertaken of the 'likely significant effects' of the Draft Local Plan. The HRA screening assessment began by considering the potential for the development proposed by each Local Plan policy to have a likely significant effect, either alone or in-combination with the other plans and projects that are reviewed in **Appendix 2**. The findings of the initial screening are summarised in **Chapter 4** and the full screening matrix can be found in **Appendix 3**.
- 3.8 A 'traffic light' system has been used to record the potential for policies and site allocations to have likely significant effects on European sites using the colour categories shown below.

Significant effects likely, prior to consideration of mitigation
Significant effects uncertain, prior to consideration of mitigation
Significant effects not likely

- 3.9 This initial screening does not represent the findings of the HRA Screening assessment as it only considers the potential for the development proposed by the policy in question to have likely significant effects. The extent to which these potential effects are mitigated by protective elements of the policy itself, other Local Plan policies or protective mechanisms outside of the Local Plan, and the resulting conclusions of the HRA Screening are described in **Chapter 4**.
- 3.10 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 very unlikely, based on current knowledge and the information available, that a proposal in the Local Plan would have a significant effect on the integrity of a European site.

Screening assumptions and information used in reaching conclusions about likely significant effects

- 3.11 The screening stage of the HRA took the approach of screening each Local Plan policy individually, which is consistent with current guidance.
- 3.12 There are no European sites within the Plan area, the closest being Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site which is 1.4 km from the Borough boundary at its closest point; Basildon town which Policy SD2 confirms as the Plan's main focus for development is approximately 4.8 km from the nearest European site. Based on this, an initial examination of the designated features of the scoped-in European sites (see **Appendix 1**), and the general nature of the Plan proposals (see **Chapter 2**), it was considered that no potential existed for most types of likely significant effect on European sites from the Local Plan proposals. The exceptions to this were the following types of potential effects which were judged as having the potential to be significant on the European sites beyond the Borough boundary:
- Increased recreation pressure.
 - Reduced water quality.
 - Reduced water resources.
 - Increased flood risk.
- 3.13 The approach taken in the HRA for screening policies for their potential to have each of these types of effect is outlined below. For some types of potential likely significant effect, the screening assessment was carried out on a proximity basis, using GIS data to determine the distance between potential development locations and the European sites that are the subject of the assessment. In the absence of accepted standards or locally specific evidence in relation to the distances over significant effects are likely, the assumptions described below were applied

¹⁰ SI No. 2010/490

Increased recreation pressure

- 3.14 The review of the characteristics of European sites within the scope of the HRA (**Appendix 1**) indicated that whilst recreational issues are only identified as a current pressure or threat at some sites, all of them have designated bird interest and associated habitats with the potential to be adversely affected by increased recreational pressure.
- 3.15 Potential adverse effects include visual and noise disturbance of bird populations by walkers, especially those with dogs, and by those engaged in marine activities such as angling, jet skiing and kite surfing. Localised damage to vegetation and soils by frequent pedestrian traffic, mountain bikes and trail bikes could also result in adverse effects, particularly if there are qualifying habitats.
- 3.16 The HRA assumed that the potential for likely significant effects due to increased recreational pressure, either alone or in-combination, only exists for European sites which are within 10 km of a location identified by the Local Plan for residential development. Increased recreation pressure relating to more distant residential development was assumed to be negligible.

Reduced water quality

- 3.17 The review of the characteristics of European sites within the scope of the HRA (**Appendix 1**) indicated that whilst water quality issues are only identified as a current pressure or threat at some sites, the designated features of all of them have the potential to be adversely affected if water entering the site were to experience significantly increased nutrient inputs or significant changes to the hydrological regime.
- 3.18 Development within Basildon Borough may adversely affect the water quality of the European sites beyond its boundary via increased volumes of treated wastewater discharged from the Water Recycling Centres or WRCs (formerly known as Wastewater Treatment Works or WwTWs) serving communities in the Borough or via combined sewer overflows during high rainfall events. These could, in turn, result in nutrient enrichment of water and potential lowering of dissolved oxygen as well as increased water velocities and levels for a distance downstream of the WwTW outfall. It was assumed that only residential development would be capable of generating significant increases in wastewater.
- 3.19 Other sources of water pollution which may be associated with development, such as contaminated surface run-off, were assumed incapable of significant effects on European sites beyond the Borough boundary.
- 3.20 The HRA assumed that the potential for likely significant effects due to reduced water quality, either alone or in-combination, only exists for European sites which are within 15 km of the Borough boundary (as identified earlier in this chapter) and which are hydrologically connected to it. Water pollution from more distant development was assumed to be sufficiently diluted and dispersed as to be negligible. The hydrological connectivity of the WRCs serving Basildon Borough is set out in **Table 3.1**, based on information contained within the HRA of the Core Strategy Preferred Options and the 2011 Water Cycle Study¹¹. It was assumed that combined sewer overflows are hydrologically connected to the same European sites.

Table 3.1 WRCs serving Basildon Borough and their hydrological connectivity to European sites

WRC serving Basildon Borough (location)	Hydrological connectivity to European sites within 15 km of Basildon Borough boundary
Basildon WRC (Cortauld Road, north of Basildon)	Despite being close to the Basildon Brook, a tributary of the River Crouch, this WRC's effluent is pumped southwards in a pipe to discharge to Timberman's Creek in Pitsea (grid reference TQ737874) which is connected to the River Thames approximately 5 km upstream of Benfleet and Southend Marshes SPA and Ramsar site and opposite the Thames Estuary and Marshes SPA and Ramsar site .
Wickford WRC (to north east of Wickford; also	Discharges to River Crouch (grid reference TQ76919401) and is therefore hydrologically connected to Crouch and Roach Estuaries (Mid-Essex

¹¹ South Essex Outline Water Cycle Study, URS for Basildon, Castle Point and Rochford Councils, September 2011.

WRC serving Basildon Borough (location)	Hydrological connectivity to European sites within 15 km of Basildon Borough boundary
serves Chelmsford City Council administrative area)	Coast Phase 3) SPA and Ramsar site and Essex Estuaries SAC.
Pitsea WRC (near Pitsea Station south of Basildon)	Discharges to Timberman's Creek (grid reference TQ736868) which is connected to the River Thames approximately 5 km upstream of Benfleet and Southend Marshes SPA and Ramsar site and opposite the Thames Estuary and Marshes SPA and Ramsar site .
Billericay WRC (East of Billericay)	Discharges to River Crouch (grid reference TQ69899420) and is therefore hydrologically connected to Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site and Essex Estuaries SAC .
<i>Shenfield and Hutton WRC (north east of Hutton; currently serves Brentwood Borough but connection to Brentwood Borough has been considered in the past)</i>	<i>Discharges to the River Wid, (grid reference TQ65109600) and is therefore hydrologically connected to Blackwater Estuary (Mid-Essex Coast Phase 4) SPA and Ramsar site and Essex Estuaries SAC (included for information only as WRC does not currently serve Basildon).</i>

- 3.21 The Council has been engaged in ongoing discussions with Anglian Water Services (AWS), which is responsible for the WRCs and sewerage network within the Borough, to understand the capacity of this wastewater infrastructure to accommodate different scales and distributions of residential development. It is notable, however, that the wastewater infrastructure implications of each proposed site have been assessed by AWS on an individual site basis. AWS explains that the cumulative effect of all of the identified allocated sites may require enhancement to capacity and should all the available capacity be taken up at the WRC then upgrade to the works may be required that may involve seeking consent from the Environment Agency for an increase in discharge of final effluent. The HRA of site allocations made reference to this information, where relevant but as it did not assess the cumulative effect on WRC capacity of all preferred options together, it was of limited use in ruling out the potential for reduced water quality effects from residential development proposals in the Local Plan.

Reduced water resources

- 3.22 The review of the characteristics of European sites within the scope of the HRA (**Appendix 1**) indicates that whilst water resources issues are only identified as a current pressure or threat at some sites, the designated features of the all them have the potential to be adversely affected by significant changes to the hydrological regime.
- 3.23 Initial consideration was also given to the potential for development proposed by the Local Plan within Basildon Borough to affect water levels and flow regimes at the European sites beyond its boundary via increased abstraction to serve its potable water needs. Previous HRA work for the Core Strategy Preferred Options ruled out the possibility of adverse effects on European sites due to reduced water resources largely on the basis that the expansion of Abberton Reservoir would more than meet water demand for the foreseeable future. The current Water Resources Management Plan (WRMP) covering Basildon Borough¹² forecasts water demand for the period 1 April 2015 to 31 March 2040 and documents how the water company plans to meet this demand. The WRMP shows that Basildon Borough lies within the Essex Water Resource Zone (WRZ) and confirms that the enlargement of Abberton Reservoir is now complete and that the Essex WRZ is forecast to have a significant supply surplus in every until 2040.
- 3.24 On this basis, the potential for the development proposed by the Local Plan to have likely significant effects on European sites hydrologically connected to the Essex WRZ due to reduced water resources was ruled out and individual policies were not screened for this potential effect.

Increased flood risk






- 3.25 The review of the characteristics of European sites within the scope of the HRA (**Appendix 1**) indicates that the designated features of the all them have the potential to be adversely affected

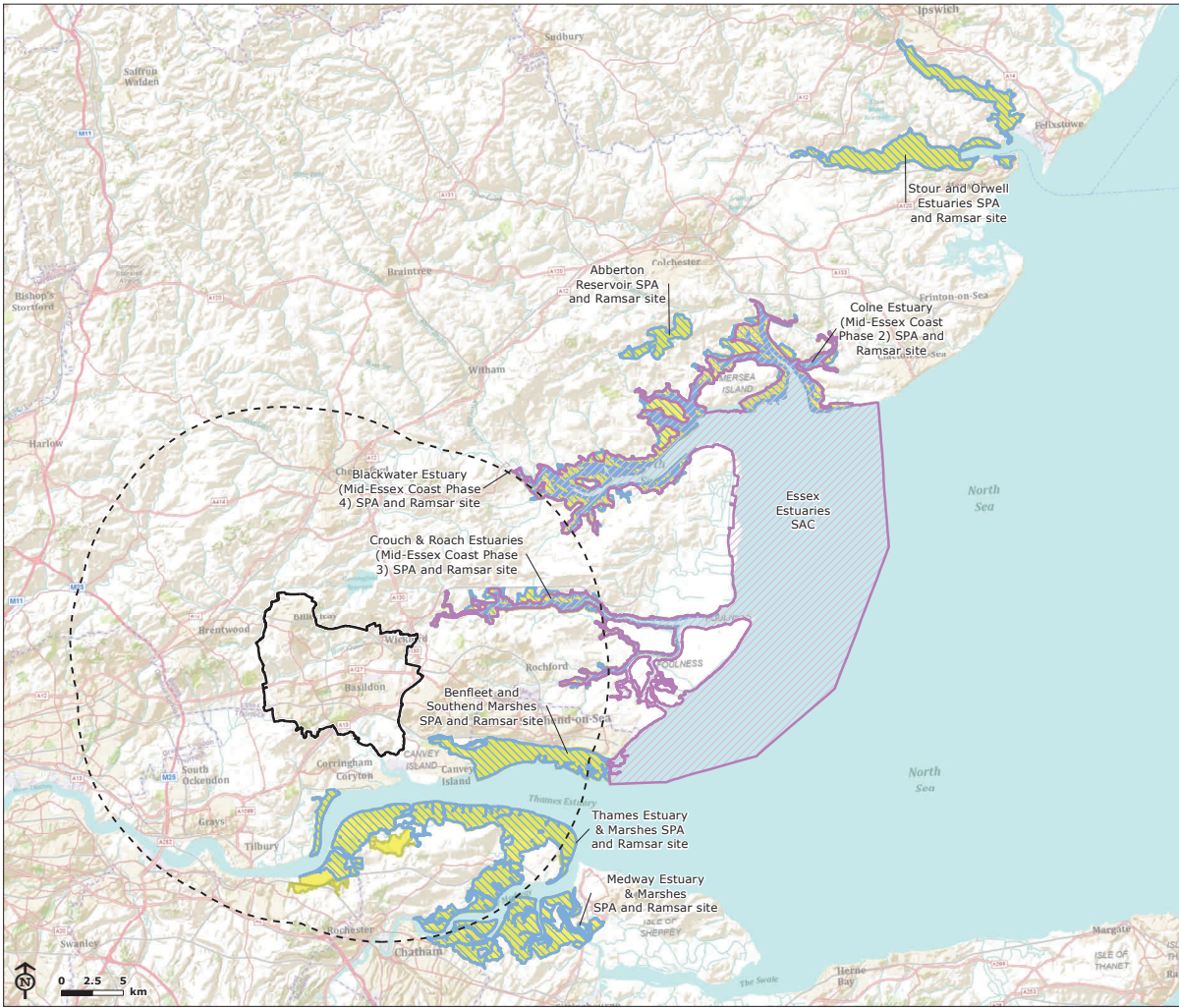
¹² Final Water Resources Management Plan, Essex and Suffolk Water, October 2014

by significant changes to the hydrological regime and/or flood damage to habitats on which designated features depend.

- 3.26 New development in areas that perform a flood storage function for rivers is likely to reduce flood storage capacity and thereby increase flood risk downstream. Where there is a European site downstream of the development site, increased flood risk could result in loss of or damage to terrestrial habitats or changed water levels and flows in aquatic habitats, adversely affecting sensitive designated features. The HRA used areas in Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) as a proxy for flood storage areas and built development within Flood Zone 3 was assumed to have the potential for significant effects, alone or in-combination, due to increased flood risk at downstream European sites. It was assumed that the likelihood of development in lower risk Flood Zones (less than a 1 in 100 chance of river flooding each year) increasing flood risk at downstream European sites was sufficiently low that these would not constitute 'likely significant effects'. It was further assumed that any increase to flood risk from development within any Flood Zone would be negligible at European sites located more than 15 km from the Borough boundary.
- 3.27 New development could also increase downstream flood risk by creating impermeable surfaces that increase the rate at which surface water drains into nearby watercourses during heavy rainfall. The HRA assumed that all development allocations on greenfield sites give rise to a potential likely significant effect on downstream European sites within 15 km of the Borough boundary, in-combination with the other greenfield development proposed by the Local Plan.

Figure 3.1: European Sites

-  Basildon borough boundary
-  15km buffer
-  Special Area of Conservation
-  Special Protection Area
-  Ramsar site



Map Scale @ A3: 1:300,000



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 Service Layer Credits: Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, IPC, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community
 CB:VG ES:Gossett, V LUCEDD 5765_001.r1_European_Sites_A3L 28/11/2015 Source: Basildon Council

4 HRA Screening assessment

- 4.1 This chapter presents the criteria against which individual Local Plan policies and allocations were screened, summarises the potential likely significant effects identified (prior to mitigation), considers the potential for these effects to act in-combination with those of other plans and projects, examines the extent to which these potential effects are mitigated by existing policy and regulatory mechanisms, and concludes as to whether likely significant effects can be ruled out.

Screening of Local Plan policies for likely significant effects

- 4.2 An initial assessment was carried out to identify whether each of the Draft Local Plan policies has the potential to have likely significant effects on any European site. Each policy or group of related policies was assigned one or more of the policy screening criteria set out in **Table 4.1**. Details of the reason(s) for the screening opinions reached for each policy are set out in **Appendix 3**. Although the screening matrix presents the screening assessment for each policy individually, the conclusions take into account the potential impacts of other plans and projects.

Table 4.1 Policy screening criteria

Effects on European site
Elements of the Local Plan that will have no effect on a European site
1. The policy or proposal will not itself lead to development (e.g. it relates to design or other qualitative criteria for development, or it is not a land use planning policy)
2. The policy or proposal is intended to protect the natural environment, including biodiversity.
3. The policy or proposal is intended to conserve or enhance the natural, built or historic environment, and enhancement measures will not be likely to have any effect on a European site.
4. The policy or proposal positively steers development away from European sites and associated sensitive areas, e.g. not developing in areas of flood risk or areas otherwise likely to be affected by climate change; or concentration of development in urban areas will not affect European site and will help to steer development and land use change away from European site and associated sensitive areas.
Elements of the Local Plan that will be subject to HRA or project assessment 'down the line' to protect European sites
5. No development could occur through this policy or proposal alone, because it is implemented through subordinate policies which are more detailed and therefore more appropriate to assess for their effects on European site and associated sensitive areas.
6. The policy or proposal makes provision for a quantum / type of development (and may or may not indicate one or more broad locations e.g. a sub-region) but the location of the development is to be selected following consideration of options in lower tier plans (development plan documents).
Elements of the Local Plan that could or would have a potential effect on European sites
7. The policy or proposal steers a quantum or type of development towards, or encourages development in, an area that includes a European site or an area where development may indirectly affect a European site.
8. The policy or proposal makes provision for a quantum, or kind of development that in the location(s) proposed would be likely to have a significant effect on a European site.
9. The policy or proposal could result in cumulative effects on European sites (especially indirect effects) of development proposals coordinated by the Local Plan, which alone would not be significant but in combination are likely to be.
10. Programmes or sequences of development delivered via a series of projects, over a period, where the implementation of the early stages would not have a significant effect on European sites, but which effectively dictate the shape, scale, duration, location, and timing of the whole project, which could have an adverse effect on such sites.
11. Developments that could close off options or alternatives in the future, that may lead to adverse effects on

Effects on European site
European sites.
12. Proposals that have a high risk of failing the tests of the Habitats Regulations at project assessment stage.
13. Policies or proposals for a quantum of development that, no matter where it was located, it would be likely to have a significant effect on a European site.

Potential likely significant effects identified

4.3 Prior to consideration of mitigation, the initial screening set out in **Appendix 3** identified the potential for likely significant effects from the development proposed by the Draft Local Plan policies and site allocations as follows.

Significant effects likely, prior to consideration of mitigation

4.4 Significant effects were not considered likely in respect of any of the policies or site allocations within the Draft Local Plan Revised Preferred Options, primarily because of the distance between European sites and the areas that are the focus for development in the Local Plan.

Significant effects not likely

4.5 Significant effects are not considered likely in relation to the Draft Local Plan policies or allocations shaded in green in **Appendix 3** for combinations of screening reasons 1, 2, 3, 4 and 5 in **Table 4.1**. In many cases, the potential for likely significant effects was able to be ruled out because the policy was concerned with managing development proposed by other policies rather proposing development itself.

Significant effects uncertain, prior to consideration of mitigation

4.6 Prior to consideration of mitigation, uncertainty regarding significant effects existed for the Local Plan policies or allocations highlighted in orange in **Appendix 3**. The types of potential likely significant effect identified were:

- Increased recreation pressure.
- Reduced water quality from increased discharges of treated wastewater or combined sewer overflows.
- Increased downstream flood risk.

4.7 These potential likely significant effects were identified for both strategic policies, such as those defining the total amount and broad locations for development, and for those with more spatially specific development proposals, including strategic site allocations.

4.8 Further consideration was therefore given to these potential significant effects in the following section.

Effects of mitigation and HRA screening conclusions

Increased recreation pressure

Policies for which potential likely significant effect identified

4.9 Significant effects were uncertain, prior to consideration of mitigation, for policies SD1, R2, R3, R5, H1, H3, H4, H6-H19, H26-H29.

4.10 Policies SD1 and H1 set the overall amount of residential development for which the location is determined by other policies. Each of the other policies listed above allocates residential development within 10 km of at least one of: Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site; Benfleet and Southend Marshes SPA and Ramsar site; or Thames Estuary and Marshes SPA and Ramsar site. In the absence of mitigation it is considered that, taken together, this residential development could contribute to increased recreation pressure on all three of these European sites. The likelihood of such effects being significant cannot be ruled out.

Mitigation available

- 4.11 The Green Infrastructure strategy set out in Policy NE1 seeks, through partnership working, to extend and enhance the network of Green Infrastructure in the Borough, including by providing links for people to the South Essex Green Grid and Nature Improvement Area. Policy NE3 protects existing Country Parks and seeks opportunities to enhance them.
- 4.12 Strategic development Policy SD1, the strategic housing Policy H1 and the implementation strategy in Policy IMP1 state that growth will be phased to align with provision of the infrastructure needed to support it. Individual strategic housing and mixed use allocation policies H7-H29 restate this and require landscape buffers to be multi-functional, these functions to include open space.
- 4.13 New open space is provided by the strategic housing allocations as follows:
- Policy H7: 6-8 ha of open space.
 - Policy H10: on-site provision in line with Policy HC1 and re-providing for any loss of open space arising from development at the site allocated in Policy H8.
 - Policy H13: 75 ha of open space.
 - Policy H15: a new strategic open space to the east of Shotgate.
 - Policy H16: new strategic open space for north Wickford, adding new connections to Public Rights of Way.
 - Policy H26: A central area of open land should deliver a 19 ha multi-functional extension to Mill Meadows Nature Reserve.
- 4.14 The Leisure and Recreation Strategy set out in Policy HC1 specifies that new provision of open space and sports and recreational facilities will have regard to the Borough's local open space standards and states that, where appropriate, the provision, enhancement and maintenance of open space, sports and recreational facilities will be secured through planning conditions and/or developer contributions. Policy HC9 requires that new residential or mixed use proposals must assess the capacity of existing facilities and that this be used to determine the additional provision required, which will be secured by a reasonable contribution towards their provision.
- 4.15 A more generic requirement to avoid harm to biodiversity is stated in housing allocation Policies H8-H30 and Policy NE5 states that proposals resulting in adverse impacts within European sites will not normally be permitted.

In-combination effects

- 4.16 The possibility of recreation pressure on the European sites scoped into the Basildon Local Plan HRA was identified within the HRAs of a number of the other plans and projects reviewed in **Appendix 2**, as a result of residential development in those other districts (for example the Local Plans for Castle Point Borough, Chelmsford City, Maldon District and Rochford District). However, those HRAs were able to rule out residual adverse effects, either at the Screening or Appropriate Assessment stage of HRA, by reliance on mitigation such as policies to provide recreational open space. Similarly, the mitigation considered for the Basildon Borough Local Plan has allowed residual recreation pressure effects on European sites to be ruled out. The possibility of effects in-combination with other plans and projects is therefore ruled out.

HRA Screening conclusion

- 4.17 The mitigation described above should ensure that development on existing open spaces does not result in a net loss of open space and that new development is accompanied by appropriate provision of new Green Infrastructure to the extent that existing capacity does not meet the needs of new residents. It is therefore concluded that **likely significant effects can be ruled out** in relation to the potential for Local Plan proposals to result in increased recreation pressure on European sites.

Reduced water quality from increased discharges of treated wastewater or combined sewer overflows.

Policies for which potential likely significant effect identified

- 4.18 Significant effects were uncertain, prior to consideration of mitigation, for policies SD1, R2, R3, R5, H1, H3, H4, H6-H29.
- 4.19 Whilst development site-level information from AWS suggests that WRC capacity is available to accommodate many of the proposed housing allocations in policies H7-H29 individually, infrastructure and/or treatment upgrades may be required to accommodate their cumulative effect, as well as development sites with planning permission but with houses yet to be constructed. Capacity in the foul sewerage network was identified as a concern for most site allocations individually, even before consideration of cumulative effects.

Mitigation available

- 4.20 Strategic development Policy SD1, the strategic housing Policy H1 and the implementation strategy in Policy IMP1 state that growth will be phased to align with provision of the infrastructure needed to support it. Individual strategic housing and mixed use allocation policies H7-H29 restate this and, where relevant to the location, draw attention to the particular need to phase development to align with any required improvements to the drainage network or at the nearby WRC. They also require landscape buffers to be multi-functional, these functions to include surface water management.
- 4.21 A more generic requirement to avoid harm to biodiversity is stated in housing allocation Policies H7-H29 and Policy NE5 states that proposals resulting in adverse impacts within European sites will not normally be permitted.
- 4.22 The Environment Agency regulates discharges to water via its environmental permitting regime. Any extension to existing discharge consents held by WRCs would be subject to this regime and, where relevant, the Environment Agency would also subject the proposal to HRA.

In-combination effects

- 4.23 The possibility of reduced water quality effects on the European sites scoped into the Basildon Local Plan HRA was identified within the HRAs of a number of the other plans and projects reviewed in **Appendix 2**, as a result of pressure on wastewater infrastructure capacity in those other districts (for example the Local Plans for Chelmsford City, Gravesham District, Maldon District, and Rochford District). However, those HRAs were able to rule out residual adverse effects, either at the Screening or Appropriate Assessment stage of HRA, by reliance on mitigation such as Local Plan policies to ensure provision of new infrastructure alongside residential development and operation of the discharge consenting regime operated by the Environment Agency. Similarly, the mitigation considered for the Basildon Borough Local Plan has allowed residual reduced water quality effects on European sites to be ruled out. The possibility of effects in-combination with other plans and projects is therefore ruled out.

HRA Screening conclusion

- 4.24 Should it not prove feasible to deliver wastewater infrastructure improvements required to avoid deterioration in downstream water quality alongside the development proposed by the Local Plan, the safeguards described under 'mitigation' above should ensure that development does not proceed. In light of the mitigation available it is therefore concluded that **likely significant effects can be ruled out** in relation to the potential for Local Plan proposals to result in reduced water quality from increased discharges of treated wastewater or combined sewer overflows.
- 4.25 Whilst this creates some uncertainty as to the deliverability of the Local Plan, recent correspondence between the Council and the Environment Agency¹³ provides comfort that the total numbers of houses allocated in the Local Plan to Wickford, Pitsea and Basildon could be accommodated within the capacity of the wastewater treatment capacities of the corresponding WRCs. The allocation to Billericay is identified as being very close to the WRC capacity and likely to require an increase to the permitted capacity or connection of some of the development to

¹³ Email from the Environment Agency to Basildon Borough Council dated 20/11/2015

other WRCs; the Environment Agency recommends that development be phased until additional sewage treatment capacity becomes available.

Increased downstream flood risk

Policies for which potential likely significant effect identified

- 4.26 Significant effects were uncertain, prior to consideration of mitigation, for policies E5, E6, E7, E8, R13, H7-H29.
- 4.27 Development on these greenfield locations could create impermeable surfaces and thereby increase surface drainage rates. Taken together, these have the potential to increase flood risk at downstream European sites.
- 4.28 For the small number of allocations that contain an area in Flood Zone 3 (Policies R5, H12, H14), the proportion of the site within Flood Zone 3 is so small that it should be possible to avoid development in that part of the site and even if this were not the case, the loss of flood storage and consequent potential for increased flood risk downstream would be negligible.

Mitigation available

- 4.29 Policies CC2 and CC4 state that the Council will ensure that new development does not increase the risk of flooding elsewhere. All development proposals must incorporate sustainable drainage systems (SuDS) which attenuate surface water on-site and slow run off to natural levels and which have the capacity to cope with extreme rainfall events. Where surface water cannot be attenuate full on-site, contribution to off-site surface water management may be acceptable if it offsets the residual development impacts.
- 4.30 A more generic requirement to avoid harm to biodiversity is stated in housing allocation Policies H7-H29 and Policy NE5 states that proposals resulting in adverse impacts within European sites will not normally be permitted.

In-combination effects

- 4.31 The possibility of increased flood risk effects on the European sites scoped into the Basildon Local Plan HRA was not identified within the HRAs of the other plans and projects reviewed in **Appendix 2**. In any event, those HRAs were able to rule out all residual adverse effects, either at the Screening or Appropriate Assessment stage of HRA, by reliance on mitigation. Similarly, the mitigation considered for the Basildon Borough Local Plan has allowed residual increased flood risk effects on European sites to be ruled out. The possibility of effects in-combination with other plans and projects is therefore ruled out.

HRA Screening conclusion

- 4.32 The mitigation described above should ensure that development does not increase surface run off rates from impermeable, built surfaces, including during extreme rainfall events. It is therefore concluded that **likely significant effects can be ruled out** in relation to the potential for Local Plan proposals to result in increased flood risk at downstream European sites.

5 Conclusions and next steps

Conclusions

- 5.1 The HRA of the Basildon Borough Draft Local Plan has been undertaken in accordance with currently available guidance and based on a precautionary approach as required under the Habitats Regulations. The initial screening assessment of the potential for individual Local Plan policies or allocations to have likely significant effects (prior to mitigation) is presented in **Appendix 3** of this report and the HRA Screening findings (taking account of available mitigation) are presented in **Chapter 4**.
- 5.2 In summary, the initial screening identified the potential for likely significant effects in relation to increased recreation pressure, reduced water quality and increased downstream flood risk. After taking into account mitigation that is already available, **the HRA Screening concluded that likely significant effects from the Draft Local Plan alone, or in-combination with other plans and projects, could be ruled out.** It is therefore not necessary to proceed to the Appropriate Assessment stage of HRA.
- 5.3 In carrying out the HRA, a number of potential improvements to the Draft Local Plan were identified, in relation to its protection for European sites. The conclusions of the HRA Screening are not dependent on adoption of these improvements but their adoption is nevertheless recommended and they are brought together in **Table 5.1** for ease of reference:

Table 5.1 Recommendations

Policy	Recommendation
E1: Economic growth strategy	Add a clause to this policy, similar to that in the strategic housing policy H1, stating that the provision of additional employment land will be phased to ensure that it is aligned with the provision of supporting infrastructure. (HRA Screening conclusion is not dependent on adoption of this recommendation)
R2: Basildon town centre regeneration R3: Laindon town centre regeneration R5: Wickford town centre regeneration	In recognition of the fact that these policies propose residential development as well as retail/town centre developments, add a requirement to them, similar to that in the housing allocation policies H7-H29, that development must be supported by sufficient infrastructure, including any improvements required to the drainage network or water recycling centre.
CC7: Renewable energy infrastructure	Add a clause to this policy stating that proposals for wind energy generation should include an assessment of whether the development site lies on a major migration route or within an important feeding, breeding or roosting area for any designated bird population of a European site.

Next steps

- 5.4 This HRA report will inform preparation of the next version of the Local Plan and it will also be sent to Natural England for comment. The HRA will be amended to reflect any advice and comments received from Natural England as well as any further changes that may be made to the policies and site allocations in the Local Plan before it is submitted for Examination in Public.

Appendix 1

Attributes of European sites

Introduction

This appendix contains information on the European sites scoped into the HRA. Site areas and designated features are drawn from SAC and SPA Standard Data Forms and Ramsar Site Information Sheets¹⁴. The overviews of sites and their locations are drawn from Natural England's Site Improvement Plans¹⁵. Site conservation objectives are drawn from Natural England's website and are only available for SACs and SPAs.¹⁶

Abberton Reservoir SPA

Site area: 726.2 ha

Overview of site and its location

Abberton Reservoir is a large water storage reservoir close to the Essex coast. It is one of the most important reservoirs in the country for overwintering waterfowl and also supports substantial aggregations of moulting birds in early autumn and a large colony of tree-nesting cormorants. Causeways divide the reservoir into three sections. Currently the water level of the main, eastern section is being raised by 3 metres to increase storage capacity. As part of the level-raising scheme, the original concrete banks have been removed and the shoreline re-profiled, creating extensive new areas of shallow wetland habitat for the site's waterfowl.

Qualifying Features

Supports the following internationally important waterbird assemblage:

- *Podiceps cristatus*: Great crested grebe (Non-breeding); *Phalacrocorax carbo*: Great cormorant (Breeding); *Cygnus olor*: Mute swan (Non-breeding); *Anas Penelope*: Eurasian wigeon (Non-breeding); *Anas strepera*: Gadwall (Non-breeding); *Anas crecca*: Eurasian teal (Non-breeding); *Anas clypeata*: Northern shoveler (Non-breeding); *Aythya farina*: Common pochard (Non-breeding); *Aythya fuligula*: Tufted duck (Non-breeding); *Bucephala clangula*: Common goldeneye (Non-breeding); *Fulica atra*: Common coot (Non-breeding); *Pluvialis apricaria*: European golden plover (Non-breeding).

Conservation objectives

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified, and subject to natural change;

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

Pressures and threats

Siltation

¹⁴ SAC and SPA Standard Data Forms and Ramsar Site Information Sheets, JNCC, <http://jncc.defra.gov.uk/page-4>

¹⁵ Site Improvement Plans: East of England, Natural England, <http://publications.naturalengland.org.uk/category/4873023563759616>

¹⁶ European Site Conservation Objectives, Natural England, <http://www.naturalengland.org.uk/ourwork/conservation/designations/sac/conservationobjectives.aspx>

Silt entering the reservoir via Layer Brook is gradually accumulating in the western and central sections. This increases water turbidity and reduces light penetration, limiting the growth of the submerged aquatic plants on which the reservoir's fauna – including many of the waterbirds – largely depends. Siltation also reduces the water depth and increases the already high nutrient load. Now that concrete banks have been removed as part of the water-level raising scheme, siltation in the eastern section might also increase as a result of wave action until the earth banks have become vegetated. Essex and Suffolk Water is monitoring water quality, aquatic vegetation and bird numbers and carrying out a programme of work to accelerate vegetation colonisation of the new earth banks.

Public access/disturbance

Human disturbance to feeding and resting waterbirds reduces their energy intake and increases energy expenditure. This can be critical if the birds are already stressed by severe weather or other factors. Disturbance at ground level is well controlled by Essex & Suffolk Water, though there is occasional trespassing. Disturbance from the air by low-flying civilian and military aircraft occurs several times each year and is more difficult to manage.

Planning Permission: general

The reservoir's waterbirds often fly over surrounding farmland on their way to and from the nearby Blackwater and Colne estuaries. Some species also use the surrounding fields for feeding. Inappropriate development in the vicinity could therefore have adverse effects on them. Planning legislation and the Habitats Regulations provide regulatory mechanisms but for some new types of development, published data from well-designed impact studies at comparable sites appears to be limited.

Changes in species distributions

The reservoir's breeding colony of tree-nesting cormorants has declined from a peak of over 500 pairs in the mid-1990s to about 160 pairs in 2010. Reasons for the decline are unknown. Possibilities include a reduction in suitable nest sites, predation (possibly linked to lower water levels in the central section), cormorant control measures at fisheries, or a decline in summer food supply within foraging distance of the colony.

Bird strike

Mute swans, and possibly other species, have been killed as a result of colliding with overhead power lines near the reservoir.

Water pollution

Water stored in the reservoir is high in nutrients (eutrophic) as it comes from intensively farmed catchment areas. As a result, algal blooms are regular in summer. In some years these may include toxic blue-green algae that can kill wildfowl, though no significant mortality has been recorded.

Air Pollution: risk of atmospheric nitrogen deposition

The site is identified as at risk from air pollution as Nitrogen deposition levels exceed the site-relevant critical load for ecosystem protection. However the site's Nitrogen load is likely to be dominated by levels in the water entering the reservoir (mainly from the distant Ouse catchment) rather than direct deposition.

Abberton Reservoir Ramsar Site

Site area: 726.2 ha.

Overview of site and its location

As for Abberton Reservoir SPA above.

Qualifying Features

Supports 23787 waterfowl (5 year peak mean 1998/99-2002/2003), including the following internationally important waterbird assemblage:

- Gadwall , *Anas strepera strepera*; Northern shoveler, *Anas clypeata*; Eurasian wigeon, *Anas Penelope*; Mute swan, *Cygnus olor*; Common pochard, *Aythya farina*; Great cormorant, *Phalacrocorax carbo carbo*; Eurasian teal, *Anas crecca*; Tufted duck, *Aythya fuligula* ; Common coot, *Fulica atra atra* ; Pied avocet, *Recurvirostra avosetta*; Ruff, *Philomachus pugnax*; Black-tailed godwit, *Limosa limosa islandica*; Spotted redshank, *Tringa erythropus*; Common greenshank, *Tringa nebularia*; Common goldeneye, *Bucephala clangula clangula*.

Conservation objectives

None available.

Pressures and threats

As for Abberton Reservoir SPA above.

Benfleet and Southend Marshes SPA

Site area: 2251.31 ha.

Overview of site and its location

The Greater Thames Complex consists of the Thames Estuary and Marshes SPA, the Medway Estuary SPA, the Swale SPA and Benfleet & Southend Marshes SPA. The Medway Estuary feeds into and lies on the south side of the outer Thames Estuary in Kent, south-east England. It forms a single tidal system with the Swale and joins the Thames Estuary between the Isle of Grain and the Isle of Sheppey. The Swale is an estuarine area that separates the Isle of Sheppey from the Kent mainland and joins the Medway to the west. Benfleet and Southend Marshes is an estuarine area on the Essex side of the Thames Estuary. These four sites contain a wide diversity of coastal habitats, such as grazing marsh, saltmarsh and mud/sandflat and eelgrass beds that support important numbers of waterbirds throughout the year. Wintering birds that use these estuaries include grebes, geese, ducks and waders whilst in summer breeding birds can be found, such as waders and terns. The area is also important for spring and autumn migration periods.

Qualifying Features

Site regularly supports 34789 waterfowl over winter, including the following waterbird assemblage:

- Dark-bellied brent goose, *Branta bernicla bernicla*.
- Grey plover, *Pluvialis squatarola*.
- Red knot, *Calidris canutus islandica*.
- Dunlin, *Calidris alpina alpina*.

Conservation objectives

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified, and subject to natural change;

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

Pressures and threats

Coastal squeeze

Coastal defences exist along much of the coastline here. Sea level rise is also occurring. It is therefore certain that if circumstances do not change, much of the supporting habitats of the SPA birds will be lost/degraded through processes such as: coastal squeeze; sedimentation rates' inability to keep pace with sea level rise; and reduced exposure (the extent and duration) of mudflats and sandflats.

Public access/disturbance

Breeding and overwintering waterbirds are susceptible to human disturbance from a range of land- and water-based activities, including: boating and watersports; walking; bait-digging; fishing, and wildfowling. Some activities such as powerboating, may produce physical disturbance to habitats. Public access, (especially dog walking and recreational boating) was identified as a medium risk during the 2009 EMS risk review project and this activity is still occurring. Moderate levels of disturbance in less sensitive locations may have no significant effect on the numbers of birds using the SIP area but the types, levels and locations of potentially disturbing activities are constantly changing. Managing the changes to minimise the risk of disturbance impacts will require a better understanding of which species and habitats are most susceptible, which types of activity are most disturbing, and which locations and times of year are most sensitive. There is inadequate information to provide appropriate management.

Invasive species

Non-native invasive species such as sea squirt and pacific oyster are spreading along the Kent coast and could begin to impact on the Swale. Sea squirt has been found in the Medway, and Pacific oysters are regarded as increasing in the Essex-Southend area. These species threaten habitats due to their ability to smother substrate and other sessile organisms. There is no good understanding of the overall distribution of these species in this site. Assessment is needed in key areas of ports and marinas, where introductions tend to first occur.

Changes in species distributions

There is a decline in population size for some of the bird species on some of the SPAs¹⁷. These are likely to be influenced by a number of factors which may vary across the four SPAs. Some of these influences are site-based as described in other parts of this Plan and some relate to wider, broad-scale changes such as wintering species distributions and effects from breeding grounds outside the UK. A greater understanding of the relative importance of site-based and wider influences is required in order to identify the potential for further actions that might halt declines, restore populations or identify scenarios where it is thought unlikely that site-based measures will reverse population declines.

Fisheries: Commercial marine and estuarine

The extent and impacts of fisheries on private grounds, particularly in the Swale Estuary, needs to be better understood. There are particular concerns regarding the dredging of shellfish within the SPAs which are a food source for the protected birds.

Invasive Species

Freshwater non-native invasive species such as pennywort, crassula, parrots feather etc. can engulf ditches, leading to loss of habitat for diving ducks. Although there are some mechanisms in place to ensure ditch management, more baseline information is needed, particularly on those species for which ditch management is not the solution

Invasive Species

Spartina anglica may be increasing at the expense of other saltmarsh habitats with adverse implications for SPA bird roost areas in Benfleet & Southend Marshes.

Vehicles: illicit

The illicit use of motor vehicles (often bikes) occurs across the area. This can cause disturbance to SPA birds. This activity was identified as a medium risk during the 2009 EMS risk review project and is still

¹⁷ Cook A.S.C.P., Barimore C., Holt C.A., Read W.J. & Austin G.E. 2013. Wetland Bird Survey Alerts 2009/2010: Changes in numbers of wintering waterbirds in the Constituent Countries of the United Kingdom, Special Protection Areas (SPAs) and Sites of Special Scientific Interest (SSSIs). BTO Research Report 641. BTO, Thetford.

occurring. Whilst various mechanisms are in place to prevent the use of vehicles they are clearly not entirely effective.

Fisheries: Commercial marine and estuarine

Commercial fishing activities categorised as 'amber or green' under Defra's revised approach to commercial fisheries in European Marine Sites require assessment and (where appropriate) management. This assessment will be undertaken by Kent & Essex IFCA. For activities categorised as 'green', these assessments should take account of any in-combination effects of amber activities, and/or appropriate plans or projects, in the site

Air Pollution: risk of atmospheric nitrogen deposition

Nitrogen deposition exceeds site-relevant critical loads.

Benfleet and Southend Marshes Ramsar site

Site area: 2251.31 ha.

Overview of site and its location

As for Benfleet and Southend Marshes SPA above.

Qualifying Features

Comprise an extensive series of saltmarshes, mudflats, and grassland which support a diverse flora and fauna, including internationally important numbers of wintering waterfowl:

- *Branta bernicla bernicla*; Dark-bellied brent goose (non-breeding).
- *Charadrius hiaticula*; Ringed plover (non-breeding).
- *Pluvialis squatarola*; Grey plover (non-breeding).
- *Calidris canutus*; Red knot (non-breeding).
- *Calidris alpina alpina*; Dunlin (non-breeding).

Conservation objectives

None available.

Pressures and threats

As for Benfleet and Southend Marshes SPA above.

Blackwater Estuary (Mid-Essex Coast Phase 4) SPA

Site area: 4395.15 ha.

Overview of site and its location

The Essex Estuaries SIP covers the Essex Estuaries SAC and five mid-Essex coast SPAs (Blackwater Estuary, Colne Estuary, Crouch and Roach Estuaries, Dengie and Foulness). The area is a typical, undeveloped, coastal plain estuarine system with associated open coast mudflats and sandbanks. Sub-tidal areas have a rich invertebrate fauna and there are extensive intertidal mudflats and sandflats. Four different saltmarsh features of European importance are represented as well as large areas of grazing marsh. The site is one of the most important areas for overwintering waterbirds in the UK and is of international importance for several breeding bird species.

Qualifying Features

Qualifying Features (Waterbird assemblage):

- *Branta bernicla bernicla*: Dark-bellied brent goose (Non-breeding).
- *Aythya ferina*: Common pochard (Breeding).
- *Circus cyaneus*: Hen harrier (Non-breeding).
- *Charadrius hiaticula*: Ringed plover (Breeding).
- *Pluvialis squatarola*: Grey plover (Non-breeding).
- *Calidris alpina alpina*: Dunlin (Non-breeding).
- *Limosa limosa islandica*: Black-tailed godwit (Non-breeding).
- *Sterna albifrons*: Little tern (Breeding).

Additional Qualifying Features Identified by the 2001 UK SPA Review:

- *Tadorna tadorna*: Common shelduck (Non-breeding).
- *Recurvirostra avosetta*: Pied avocet (Non-breeding).
- *Charadrius hiaticula*: Ringed plover (Non-breeding).
- *Pluvialis apricaria*: European golden plover (Non-breeding).
- *Philomachus pugnax*: Ruff (Non-breeding).
- *Tringa totanus*: Common redshank (Non-breeding).

Conservation objectives

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified, and subject to natural change;

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.

Pressures and threats

Coastal squeeze

Coastal defences along much of the Essex coastline prevent intertidal habitats from shifting landward in response to rising sea levels. As a result, these habitats are being gradually degraded and reduced in extent, with knock-on effects on the waterbirds and other species they support. 'Managed realignment' schemes and additional intervention measures to create new areas of intertidal habitat and reduce erosion rates are being implemented but more will be needed to offset future losses. Grazing marshes in the SIP area are important for waterbirds and are also threatened by sea level rise because most are near or below mean high tide level, currently protected behind seawalls.

Public Access/Disturbance

Breeding and overwintering waterbirds are susceptible to human disturbance from a range of land- and water-based activities - including boating and watersports, walking, bait-digging, fishing and wildfowling - as well as low-flying aircraft. Some activities, such as powerboating, may produce physical disturbance to habitats. Moderate levels of disturbance in less sensitive locations may have no significant effect on the numbers of birds using the SIP area but the types, levels and locations of potentially disturbing activities are constantly changing. Managing the changes to minimise the risk of disturbance impacts will require a better understanding of which species and habitats are most susceptible, which types of activity are most disturbing, and which locations and times of year are most sensitive.

Fisheries: Commercial marine and estuaries

Commercial fishing activities categorised as Amber or Green under Defra's revised approach to commercial fisheries in EMSs are being assessed by Kent and Essex Inshore Fisheries and Conservation Authority (KEIFCA) to determine whether management is required. For activities categorised as Amber and Green these assessments should take account of any relevant in combination effects with other fishing activities. Shellfish dredging over subtidal habitats has been identified as an Amber activity and is considered a high priority for assessment and development of possible management for the site.

Planning permission: General

Several of the issues affecting the Essex Estuaries and the management of disturbance effects on the sites are related to each other, and addressing them is likely to require an improved overview of the relative sensitivities of different habitats, species and locations to different types of development (perhaps summarised as sensitivity maps and matrices for the SIP area). Difficult issues include:

- (a) Assessing the cumulative effects of numerous, small and often 'non-standard' developments
- (b) Development outside the SPA/SAC boundaries can have negative impacts, particularly on the estuaries' birds
- (c) Assessing the indirect, 'knock-on' effects of proposals
- (d) Pressure to relax planning conditions on existing developments.

Changes in species distributions

Declines in the numbers of some of the waterbird species using the Essex Estuaries SIP area may be due to changes in their distributions or population levels at a national or continental scale, possibly linked to climate change. For example, milder winters may be allowing birds to overwinter closer to their northern breeding grounds, or changes on the breeding grounds may be reducing breeding success. When assessing SPA condition, distinguishing these types of large-scale effect from effects produced by changes within the site itself is important.

Invasive species

An increase in Pacific oyster *Crassostrea gigas* settlement and colonisation within the European Marine Site (EMS) may result in areas of foreshore being covered in such numbers as to make them difficult to access and utilise as feeding grounds for overwintering birds. The importance of Pacific oysters for the local shellfish industry is recognised, however we would not like to see an overall increase in the extent of foreshore across the EMS populated by Pacific oysters. Other non-native invasive species such as the American whelk tingle *Urosalpinx cinerea* and Slipper limpet *Crepidula fornicata* are known to occupy subtidal muddy habitats, potentially impacting native communities through competition for resources and predation.

Fisheries: Recreational marine and estuarine

Recreational bait digging may impact waterbirds by reducing prey availability and creating disturbance in intertidal feeding areas. It could also damage the intertidal mudflats and sandflats and associated sub-features and communities, such as eelgrass beds. The extent of the activity and potential impacts on site features are not currently well understood.

Fisheries: Commercial marine and estuarine

Bottom towed fishing gear (i.e. any fishing instrument designed to take sea fisheries resources from the seabed) has been categorised as a 'Red' for the interest features listed, specifically the seagrass beds *Zostera* spp, a sub-feature of the SAC, as part of Defra's revised approach to commercial fisheries management in European Marine Sites (EMS). Appropriate management measures will be implemented and enforced by Kent and Essex Inshore Fisheries and Conservation Authority (KEIFCA) who have put in place the 'Bottom Towed Fishing Gear Byelaw' within the SAC to prohibit the above fishing gear being used over the majority of known seagrass beds.

Fisheries: Commercial marine and estuarine

Marine fisheries carried out under private rights, or under management defined in Several or Hybrid Orders, fall outside Defra's revised approach to commercial fisheries management in EMSs. A variety of fishing gears are used in these fisheries (e.g. Hydraulic and non-hydraulic dredging and shore based activities (e.g. shellfish collection)) which may be applying pressure to site features, including abrasion of

the seabed, visual disturbance, and habitat structure changes. Potential impacts need to be better understood and assessed with potential management introduced if required.

Invasive Species

The invasive Common cord-grass *Spartina anglica* occurs widely within this site, as well as native Small cord-grass *Spartina maritima* in certain locations, and the site is designated for H1320 *Spartina* swards. There is a need to improve understanding of the dynamics of *S.anglica* on the site in order to determine if changes in the species' distribution adversely affect other species and habitats, including feeding and roosting areas of SPA bird species.

Air Pollution: risk of atmospheric nitrogen deposition

Atmospheric nitrogen deposition exceeds the relevant critical loads for coastal dune habitats used by breeding terns and hence there is a risk of harmful effects. However, on the Essex estuaries declines in the numbers of breeding terns appear to be due mainly to erosion of a man-made cockle-shingle bank (at Foulness) and to disturbance (elsewhere), rather than to over-vegetation of breeding areas caused by nitrogen deposition.

Blackwater Estuary (Mid-Essex Coast Phase 4) Ramsar site

Site area: 4395.15 ha.

Overview of site and its location

As for Blackwater Estuary (Mid-Essex Coast Phase 4) SPA above.

Qualifying Features

Represents 70% of the saltmarsh habitat in Essex and 7% of the total area of saltmarsh in Britain.

Invertebrate fauna includes at least 16 British Red Data Book species: water beetle *Paracymus aeneus*; damselfly *Lestes dryas*; flies *Aedes flavescens*, *Erioptera bivittata*, *Hybomitra expollicata*; spiders *Heliophanus auratus* and *Trichopterna cito*; beetles *Baris scolopacea*, *Philonthus punctus*, *Graptodytes bilineatus* and *Malachius vulneratus*; flies *Campsicemus magius*, *Myopites eximia*; moths *Idaea ochrata* and *Malacosoma castrensis*; spider *Euophrys*.

Supports a full and representative sequences of saltmarsh plant communities covering the range of variation in Britain.

Supports the following internationally important wildfowl assemblage:

- Dark-bellied brent goose, *Branta bernicla bernicla*; Grey plover, *Pluvialis squatarola*; Dunlin, *Calidris alpina alpina*; Black-tailed godwit, *Limosa limosa islandica*; European golden plover, *Pluvialis apricaria apricaria*; Common redshank, *Tringa totanus tetanus*.

Conservation objectives

None available.

Pressures and threats

As for Blackwater Estuary (Mid-Essex Coast Phase 4) SPA above.

Colne Estuary (Mid-Essex Coast Phase 2) SPA

Site area: 2701.43 ha.

Overview of site and its location

The Essex Estuaries SIP covers the Essex Estuaries SAC and five mid-Essex coast SPAs (Blackwater Estuary, Colne Estuary, Crouch and Roach Estuaries, Dengie and Foulness). The area is a typical, undeveloped, coastal plain estuarine system with associated open coast mudflats and sandbanks. Sub-

tidal areas have a rich invertebrate fauna and there are extensive intertidal mudflats and sandflats. Four different saltmarsh features of European importance are represented as well as large areas of grazing marsh. The site is one of the most important areas for overwintering waterbirds in the UK and is of international importance for several breeding bird species.

Qualifying Features

Annex I populations of the following species:

- During the breeding season: Little Tern, *Sterna albifrons*.
- Over winter: Avocet, *Recurvirostra avosetta*; Golden Plover, *Pluvialis apricaria*; Hen Harrier, *Circus cyaneus*.

This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:

- Over winter: Dark-bellied Brent Goose, *Branta bernicla bernicla*; Redshank, *Tringa totanus*

The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl

Conservation objectives

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified, and subject to natural change;

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

Pressures and threats

Coastal squeeze

Coastal defences along much of the Essex coastline prevent intertidal habitats from shifting landward in response to rising sea levels. As a result, these habitats are being gradually degraded and reduced in extent, with knock-on effects on the waterbirds and other species they support. 'Managed realignment' schemes and additional intervention measures to create new areas of intertidal habitat and reduce erosion rates are being implemented but more will be needed to offset future losses. Grazing marshes in the SIP area are important for waterbirds and are also threatened by sea level rise because most are near or below mean high tide level, currently protected behind seawalls.

Public Access/Disturbance

Breeding and overwintering waterbirds are susceptible to human disturbance from a range of land- and water-based activities - including boating and watersports, walking, bait-digging, fishing and wildfowling - as well as low-flying aircraft. Some activities, such as powerboating, may produce physical disturbance to habitats. Moderate levels of disturbance in less sensitive locations may have no significant effect on the numbers of birds using the SIP area but the types, levels and locations of potentially disturbing activities are constantly changing. Managing the changes to minimise the risk of disturbance impacts will require a better understanding of which species and habitats are most susceptible, which types of activity are most disturbing, and which locations and times of year are most sensitive.

Fisheries: Commercial marine and estuaries

Commercial fishing activities categorised as Amber or Green under Defra's revised approach to commercial fisheries in EMSs are being assessed by Kent and Essex Inshore Fisheries and Conservation Authority (KEIFCA) to determine whether management is required. For activities categorised as Amber

and Green these assessments should take account of any relevant in combination effects with other fishing activities. Shellfish dredging over subtidal habitats has been identified as an Amber activity and is considered a high priority for assessment and development of possible management for the site.

Planning permission: General

Several of the issues affecting the Essex Estuaries and the management of disturbance effects on the sites are related to each other, and addressing them is likely to require an improved overview of the relative sensitivities of different habitats, species and locations to different types of development (perhaps summarised as sensitivity maps and matrices for the SIP area). Difficult issues include:

- (a) Assessing the cumulative effects of numerous, small and often 'non-standard' developments
- (b) Development outside the SPA/SAC boundaries can have negative impacts, particularly on the estuaries' birds
- (c) Assessing the indirect, 'knock-on' effects of proposals
- (d) Pressure to relax planning conditions on existing developments.

Changes in species distributions

Declines in the numbers of some of the waterbird species using the Essex Estuaries SIP area may be due to changes in their distributions or population levels at a national or continental scale, possibly linked to climate change. For example, milder winters may be allowing birds to overwinter closer to their northern breeding grounds, or changes on the breeding grounds may be reducing breeding success. When assessing SPA condition, distinguishing these types of large-scale effect from effects produced by changes within the site itself is important.

Invasive species

An increase in Pacific oyster *Crassostrea gigas* settlement and colonisation within the European Marine Site (EMS) may result in areas of foreshore being covered in such numbers as to make them difficult to access and utilise as feeding grounds for overwintering birds. The importance of Pacific oysters for the local shellfish industry is recognised, however we would not like to see an overall increase in the extent of foreshore across the EMS populated by Pacific oysters. Other non-native invasive species such as the American whelk tingle *Urosalpinx cinerea* and Slipper limpet *Crepidula fornicata* are known to occupy subtidal muddy habitats, potentially impacting native communities through competition for resources and predation.

Fisheries: Recreational marine and estuarine

Recreational bait digging may impact waterbirds by reducing prey availability and creating disturbance in intertidal feeding areas. It could also damage the intertidal mudflats and sandflats and associated sub-features and communities, such as eelgrass beds. The extent of the activity and potential impacts on site features are not currently well understood.

Fisheries: Commercial marine and estuarine

Bottom towed fishing gear (i.e. any fishing instrument designed to take sea fisheries resources from the seabed) has been categorised as a 'Red' for the interest features listed, specifically the seagrass beds *Zostera* spp, a sub-feature of the SAC, as part of Defra's revised approach to commercial fisheries management in European Marine Sites (EMS). Appropriate management measures will be implemented and enforced by Kent and Essex Inshore Fisheries and Conservation Authority (KEIFCA) who have put in place the 'Bottom Towed Fishing Gear Byelaw' within the SAC to prohibit the above fishing gear being used over the majority of known seagrass beds.

Fisheries: Commercial marine and estuarine

Marine fisheries carried out under private rights, or under management defined in Several or Hybrid Orders, fall outside Defra's revised approach to commercial fisheries management in EMSs. A variety of fishing gears are used in these fisheries (e.g. Hydraulic and non-hydraulic dredging and shore based activities (e.g. shellfish collection)) which may be applying pressure to site features, including abrasion of the seabed, visual disturbance, and habitat structure changes. Potential impacts need to be better understood and assessed with potential management introduced if required.

Invasive Species

The invasive Common cord-grass *Spartina anglica* occurs widely within this site, as well as native Small cord-grass *Spartina maritima* in certain locations, and the site is designated for H1320 *Spartina* swards.

There is a need to improve understanding of the dynamics of *S.anglica* on the site in order to determine if changes in the species' distribution adversely affect other species and habitats, including feeding and roosting areas of SPA bird species.

Air Pollution: risk of atmospheric nitrogen deposition

Atmospheric nitrogen deposition exceeds the relevant critical loads for coastal dune habitats used by breeding terns and hence there is a risk of harmful effects. However, on the Essex estuaries declines in the numbers of breeding terns appear to be due mainly to erosion of a man-made cockle-shingle bank (at Foulness) and to disturbance (elsewhere), rather than to over-vegetation of breeding areas caused by nitrogen deposition.

Colne Estuary (Mid-Essex Coast Phase 2) Ramsar site

Site area: 2701.43 ha.

Overview of site and its location

As for Colne Estuary (Mid-Essex Coast Phase 2) SPA above.

Qualifying Features

Ramsar criterion 1: The site is important due to the extent and diversity of saltmarsh present.

Ramsar criterion 2: The site supports 12 species of nationally scarce plants and at least 38 British Red Data Book invertebrate species.

Ramsar criterion 3: This site supports a full and representative sequences of saltmarsh plant communities covering the range of variation in Britain.

Ramsar criterion 5: Assemblages of international importance:

Species with peak counts in winter: 32,041 waterfowl (5 year peak mean 1998/99-2002/2003)

Ramsar criterion 6: Species/populations occurring at levels of international importance. Qualifying Species/populations (as identified at designation):

- Species with peak counts in winter: Dark-bellied brent goose, *Branta bernicla bernicla*; Common redshank, *Tringa totanus tetanus*.

Species/populations identified subsequent to designation for possible future consideration under criterion 6:

- Species with peak counts in winter: Black-tailed godwit , *Limosa limosa islandica*

Conservation objectives

None available.

Pressures and threats

As for Colne Estuary (Mid-Essex Coast Phase 2) SPA above.

Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA

Site area: 1735.58 ha.

Overview of site and its location

The Essex Estuaries SIP covers the Essex Estuaries SAC and five mid-Essex coast SPAs (Blackwater Estuary, Colne Estuary, Crouch and Roach Estuaries, Dengie and Foulness). The area is a typical, undeveloped, coastal plain estuarine system with associated open coast mudflats and sandbanks. Sub-tidal areas have a rich invertebrate fauna and there are extensive intertidal mudflats and sandflats. Four different saltmarsh features of European importance are represented as well as large areas of grazing

marsh. The site is one of the most important areas for overwintering waterbirds in the UK and is of international importance for several breeding bird species.

Qualifying Features

Site regularly supports over winter:

- Branta bernicla bernicla, Dark-bellied brent goose; Circus cyaneus, Hen harrier.

Conservation objectives

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified, and subject to natural change;

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

Pressures and threats

Coastal squeeze

Coastal defences along much of the Essex coastline prevent intertidal habitats from shifting landward in response to rising sea levels. As a result, these habitats are being gradually degraded and reduced in extent, with knock-on effects on the waterbirds and other species they support. 'Managed realignment' schemes and additional intervention measures to create new areas of intertidal habitat and reduce erosion rates are being implemented but more will be needed to offset future losses. Grazing marshes in the SIP area are important for waterbirds and are also threatened by sea level rise because most are near or below mean high tide level, currently protected behind seawalls.

Public Access/Disturbance

Breeding and overwintering waterbirds are susceptible to human disturbance from a range of land- and water-based activities - including boating and watersports, walking, bait-digging, fishing and wildfowling - as well as low-flying aircraft. Some activities, such as powerboating, may produce physical disturbance to habitats. Moderate levels of disturbance in less sensitive locations may have no significant effect on the numbers of birds using the SIP area but the types, levels and locations of potentially disturbing activities are constantly changing. Managing the changes to minimise the risk of disturbance impacts will require a better understanding of which species and habitats are most susceptible, which types of activity are most disturbing, and which locations and times of year are most sensitive.

Fisheries: Commercial marine and estuaries

Commercial fishing activities categorised as Amber or Green under Defra's revised approach to commercial fisheries in EMSs are being assessed by Kent and Essex Inshore Fisheries and Conservation Authority (KEIFCA) to determine whether management is required. For activities categorised as Amber and Green these assessments should take account of any relevant in combination effects with other fishing activities. Shellfish dredging over subtidal habitats has been identified as an Amber activity and is considered a high priority for assessment and development of possible management for the site.

Planning permission: General

Several of the issues affecting the Essex Estuaries and the management of disturbance effects on the sites are related to each other, and addressing them is likely to require an improved overview of the relative sensitivities of different habitats, species and locations to different types of development (perhaps summarised as sensitivity maps and matrices for the SIP area). Difficult issues include:

- (a) Assessing the cumulative effects of numerous, small and often 'non-standard' developments
- (b) Development outside the SPA/SAC boundaries can have negative impacts, particularly on the estuaries' birds
- (c) Assessing the indirect, 'knock-on' effects of proposals
- (d) Pressure to relax planning conditions on existing developments.

Changes in species distributions

Declines in the numbers of some of the waterbird species using the Essex Estuaries SIP area may be due to changes in their distributions or population levels at a national or continental scale, possibly linked to climate change. For example, milder winters may be allowing birds to overwinter closer to their northern breeding grounds, or changes on the breeding grounds may be reducing breeding success. When assessing SPA condition, distinguishing these types of large-scale effect from effects produced by changes within the site itself is important.

Invasive species

An increase in Pacific oyster *Crassostrea gigas* settlement and colonisation within the European Marine Site (EMS) may result in areas of foreshore being covered in such numbers as to make them difficult to access and utilise as feeding grounds for overwintering birds. The importance of Pacific oysters for the local shellfish industry is recognised, however we would not like to see an overall increase in the extent of foreshore across the EMS populated by Pacific oysters. Other non-native invasive species such as the American whelk tingle *Urosalpinx cinerea* and Slipper limpet *Crepidula fornicata* are known to occupy subtidal muddy habitats, potentially impacting native communities through competition for resources and predation.

Fisheries: Recreational marine and estuarine

Recreational bait digging may impact waterbirds by reducing prey availability and creating disturbance in intertidal feeding areas. It could also damage the intertidal mudflats and sandflats and associated sub-features and communities, such as eelgrass beds. The extent of the activity and potential impacts on site features are not currently well understood.

Fisheries: Commercial marine and estuarine

Bottom towed fishing gear (i.e. any fishing instrument designed to take sea fisheries resources from the seabed) has been categorised as a 'Red' for the interest features listed, specifically the seagrass beds *Zostera* spp, a sub-feature of the SAC, as part of Defra's revised approach to commercial fisheries management in European Marine Sites (EMS). Appropriate management measures will be implemented and enforced by Kent and Essex Inshore Fisheries and Conservation Authority (KEIFCA) who have put in place the 'Bottom Towed Fishing Gear Byelaw' within the SAC to prohibit the above fishing gear being used over the majority of known seagrass beds.

Fisheries: Commercial marine and estuarine

Marine fisheries carried out under private rights, or under management defined in Several or Hybrid Orders, fall outside Defra's revised approach to commercial fisheries management in EMSs. A variety of fishing gears are used in these fisheries (e.g. Hydraulic and non-hydraulic dredging and shore based activities (e.g. shellfish collection)) which may be applying pressure to site features, including abrasion of the seabed, visual disturbance, and habitat structure changes. Potential impacts need to be better understood and assessed with potential management introduced if required.

Invasive Species

The invasive Common cord-grass *Spartina anglica* occurs widely within this site, as well as native Small cord-grass *Spartina maritima* in certain locations, and the site is designated for H1320 *Spartina* swards. There is a need to improve understanding of the dynamics of *S.anglica* on the site in order to determine if changes in the species' distribution adversely affect other species and habitats, including feeding and roosting areas of SPA bird species.

Air Pollution: risk of atmospheric nitrogen deposition

Atmospheric nitrogen deposition exceeds the relevant critical loads for coastal dune habitats used by breeding terns and hence there is a risk of harmful effects. However, on the Essex estuaries declines in the numbers of breeding terns appear to be due mainly to erosion of a man-made cockle-shingle bank (at

Foulness) and to disturbance (elsewhere), rather than to over-vegetation of breeding areas caused by nitrogen deposition.

Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) Ramsar site

Site area: 1735.58 ha.

Overview of site and its location

As for Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA above.

Qualifying Features

Supports an appreciable assemblage of rare, vulnerable or endangered including 13 nationally scarce plant species:

- slender hare's ear, *Bupleurum tenuissimum*; divided sedge, *Carex divisa*; sea barley, *Hordeum marinum*; golden-samphire, *Inula crithmoides*; laxflowered sea-lavender, *Limonium humile*; curved hard-grass, *Parapholis incurva*; Borrer's saltmarsh grass, *Puccinellia fasciculata*; stiff saltmarsh grass, *Puccinellia rupestris*; spiral tasselweed, *Ruppia cirrhosa*; one-flowered glasswort, *Salicornia pusilla*; small cord-grass, *Spartina maritime*; shrubby seablite, *Suaeda vera*; sea clover, *Trifolium squamosum*.

Several important invertebrate species also present including

- scarce emerald damselfly, *Lestes dryas*; the shorefly, *Parydroptera disco-myzina*; the rare soldier fly, *Stratiomys singularior*; the large horsefly, *Hybomitra expollicata*; beetles *Graptodytes bilineatus*, *Malachius vulneratus*; the ground lackey moth, *Malacosoma castrensis* and *Eucosoma catoprana*.

Also supports the following internationally important waterbird assemblage:

- Dark-bellied brent goose, *Branta bernicla* *Bernicla*.

Conservation objectives

None available.

Pressures and threats

As for Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA above.

Essex Estuaries SAC

Site area: 46140.82 ha.

Overview of site and its location

The Essex Estuaries SIP covers the Essex Estuaries SAC and five mid-Essex coast SPAs (Blackwater Estuary, Colne Estuary, Crouch and Roach Estuaries, Dengie and Foulness). The area is a typical, undeveloped, coastal plain estuarine system with associated open coast mudflats and sandbanks. Sub-tidal areas have a rich invertebrate fauna and there are extensive intertidal mudflats and sandflats. Four different saltmarsh features of European importance are represented as well as large areas of grazing marsh. The site is one of the most important areas for overwintering waterbirds in the UK and is of international importance for several breeding bird species.

Qualifying Features

Annex 1 habitats that are a primary reason for selection of this site:

- Estuaries.
- Mudflats and sandflats not covered by seawater at low tide.

- Salicornia and other animals colonising mud and sand.
- Spartina swards (*Spartinion maritimae*).
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*).
- Mediterranean and thermo-Atlantic halophilous scrubs.

Annex 1 habitats present as a qualifying feature:

- Sandbanks which are slightly covered by seawater all the time.

Conservation objectives

With regard to the SAC and the natural habitats and/or species for which the site has been designated, and subject to natural change; 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.
- The supporting processes on which qualifying natural habitats rely.

Pressures and threats

Coastal squeeze

Coastal defences along much of the Essex coastline prevent intertidal habitats from shifting landward in response to rising sea levels. As a result, these habitats are being gradually degraded and reduced in extent, with knock-on effects on the waterbirds and other species they support. 'Managed realignment' schemes and additional intervention measures to create new areas of intertidal habitat and reduce erosion rates are being implemented but more will be needed to offset future losses. Grazing marshes in the SIP area are important for waterbirds and are also threatened by sea level rise because most are near or below mean high tide level, currently protected behind seawalls.

Public Access/Disturbance

Breeding and overwintering waterbirds are susceptible to human disturbance from a range of land- and water-based activities - including boating and watersports, walking, bait-digging, fishing and wildfowling - as well as low-flying aircraft. Some activities, such as powerboating, may produce physical disturbance to habitats. Moderate levels of disturbance in less sensitive locations may have no significant effect on the numbers of birds using the SIP area but the types, levels and locations of potentially disturbing activities are constantly changing. Managing the changes to minimise the risk of disturbance impacts will require a better understanding of which species and habitats are most susceptible, which types of activity are most disturbing, and which locations and times of year are most sensitive.

Fisheries: Commercial marine and estuaries

Commercial fishing activities categorised as Amber or Green under Defra's revised approach to commercial fisheries in EMSs are being assessed by Kent and Essex Inshore Fisheries and Conservation Authority (KEIFCA) to determine whether management is required. For activities categorised as Amber and Green these assessments should take account of any relevant in combination effects with other fishing activities. Shellfish dredging over subtidal habitats has been identified as an Amber activity and is considered a high priority for assessment and development of possible management for the site.

Planning permission: General

Several of the issues affecting the Essex Estuaries and the management of disturbance effects on the sites are related to each other, and addressing them is likely to require an improved overview of the relative sensitivities of different habitats, species and locations to different types of development (perhaps summarised as sensitivity maps and matrices for the SIP area). Difficult issues include:

- (a) Assessing the cumulative effects of numerous, small and often 'non-standard' developments
- (b) Development outside the SPA/SAC boundaries can have negative impacts, particularly on the estuaries' birds

- (c) Assessing the indirect, 'knock-on' effects of proposals
- (d) Pressure to relax planning conditions on existing developments.

Changes in species distributions

Declines in the numbers of some of the waterbird species using the Essex Estuaries SIP area may be due to changes in their distributions or population levels at a national or continental scale, possibly linked to climate change. For example, milder winters may be allowing birds to overwinter closer to their northern breeding grounds, or changes on the breeding grounds may be reducing breeding success. When assessing SPA condition, distinguishing these types of large-scale effect from effects produced by changes within the site itself is important.

Invasive species

An increase in Pacific oyster *Crassostrea gigas* settlement and colonisation within the European Marine Site (EMS) may result in areas of foreshore being covered in such numbers as to make them difficult to access and utilise as feeding grounds for overwintering birds. The importance of Pacific oysters for the local shellfish industry is recognised, however we would not like to see an overall increase in the extent of foreshore across the EMS populated by Pacific oysters. Other non-native invasive species such as the American whelk tingle *Urosalpinx cinerea* and Slipper limpet *Crepidula fornicata* are known to occupy subtidal muddy habitats, potentially impacting native communities through competition for resources and predation.

Fisheries: Recreational marine and estuarine

Recreational bait digging may impact waterbirds by reducing prey availability and creating disturbance in intertidal feeding areas. It could also damage the intertidal mudflats and sandflats and associated sub-features and communities, such as eelgrass beds. The extent of the activity and potential impacts on site features are not currently well understood.

Fisheries: Commercial marine and estuarine

Bottom towed fishing gear (i.e. any fishing instrument designed to take sea fisheries resources from the seabed) has been categorised as a 'Red' for the interest features listed, specifically the seagrass beds *Zostera* spp, a sub-feature of the SAC, as part of Defra's revised approach to commercial fisheries management in European Marine Sites (EMS). Appropriate management measures will be implemented and enforced by Kent and Essex Inshore Fisheries and Conservation Authority (KEIFCA) who have put in place the 'Bottom Towed Fishing Gear Byelaw' within the SAC to prohibit the above fishing gear being used over the majority of known seagrass beds.

Fisheries: Commercial marine and estuarine

Marine fisheries carried out under private rights, or under management defined in Several or Hybrid Orders, fall outside Defra's revised approach to commercial fisheries management in EMSs. A variety of fishing gears are used in these fisheries (e.g. Hydraulic and non hydraulic dredging and shore based activities (e.g. shellfish collection)) which may be applying pressure to site features, including abrasion of the seabed, visual disturbance, and habitat structure changes. Potential impacts need to be better understood and assessed with potential management introduced if required.

Invasive Species

The invasive Common cord-grass *Spartina anglica* occurs widely within this site, as well as native Small cord-grass *Spartina maritima* in certain locations, and the site is designated for H1320 *Spartina* swards. There is a need to improve understanding of the dynamics of *S.anglica* on the site in order to determine if changes in the species' distribution adversely affect other species and habitats, including feeding and roosting areas of SPA bird species.

Air Pollution: risk of atmospheric nitrogen deposition

Atmospheric nitrogen deposition exceeds the relevant critical loads for coastal dune habitats used by breeding terns and hence there is a risk of harmful effects. However, on the Essex estuaries declines in the numbers of breeding terns appear to be due mainly to erosion of a man-made cockle-shingle bank (at Foulness) and to disturbance (elsewhere), rather than to over-vegetation of breeding areas caused by nitrogen deposition.

Hamford Water SPA

Site area: 2187.21 ha.

Overview of site and its location

Hamford Water is a large, shallow estuarine basin comprising tidal creeks and islands, intertidal mud and sand flats, and saltmarshes. The flats are a small, locally sheltered area of medium to low level clay and silt flats. In places, particularly on the seaward side, the London Clay bedrock is exposed, and this area with soft recent muds provides contrasting substrates for inter-tidal algae and invertebrates. The saltmarsh fringe is of varying width outside the sea wall around most of Hamford Water, and the islands, notably Horsey, Skippers, Hedge-End and Garnham's, have substantial saltmarsh on their margins or, locally, within their breached sea walls. Above the saltmarsh there is unimproved and improved grassland (including grazing marsh), scrub, woodland, hedges, ditches, ponds and reedbeds. The site is important for several internationally important populations of overwintering and breeding waterfowl (SPA) as well as being the most important area for Fisher's estuarine moth *Gortyna borelii lunata* in the United Kingdom (cSAC)

Qualifying Features

Annex I species present as a qualifying feature:

During the breeding season:

- Little Tern, *Sterna albifrons*.

Over winter:

- Avocet, *Recurvirostra avosetta*; Golden Plover, *Pluvialis apricaria*; Ruff, *Philomachus pugnax*.

This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:

- On passage: Ringed Plover, *Charadrius hiaticula*
- Over winter: Black-tailed Godwit, *Limosa limosa islandica*; Dark-bellied Brent Goose *Branta bernicla bernicla*; Grey Plover, *Pluvialis squatarola*; Ringed Plover, *Charadrius hiaticula*; Teal, *Anas crecca*; Common shelduck, *Tadorna tadorna*; Common redshank, *Tringa tetanus*.

The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl.

Conservation objectives

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified, and subject to natural change;

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.

Pressures and threats

Coastal Squeeze

Areas of intertidal saltmarsh, mudflats, sand and shingle used by overwintering and breeding birds for feeding, roosting and/or nesting are under threat from coastal squeeze. The consequences of climate change, including sea level rise and an increased frequency in coastal storms and tidal surges, are likely

to be contributing factors in coastal squeeze. Tectonic subsidence along the east coast of England and hard sea defences are also likely to exacerbate the issue.

Inappropriate scrub control

Scrub encroachment results in a loss of habitat for Fisher's Estuarine Moth, as the moth's larval foodplant (Hog's Fennel) is a species of open grassland. Although there are plans in place for scrub reduction/control in several areas, more action is likely to be needed to get/keep it under control.

Changes in species distributions

The decline in numbers of some species of bird in Hamford Water may be related to international changes in distribution and/or population levels related to climate change. This includes climatic variables and habitat quality issues at breeding grounds outside of the UK

Public Access/Disturbance

There is some unauthorised public access on foot, from boats and by quad bike/motorbike to sensitive localised areas in Hamford Water.

Air Pollution: risk of atmospheric nitrogen deposition

Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site. This requires further investigation.

Fisheries: Commercial marine and estuarine

Commercial fishing activities categorised as 'amber or green' under Defra's revised approach to commercial fisheries in European Marine Sites require assessment and (where appropriate) management. This assessment will be undertaken by Kent and Essex Inshore Fisheries Conservation Authority (IFCA). For activities categorised as 'green', these assessments should take account of any in-combination effects of amber activities, and/or appropriate plans or projects, in the site.

Hamford Water Ramsar site

Site area: 2187.21 ha.

Overview of site and its location

As for Hamford Water SPA above.

Qualifying Features

Species/populations with peak counts in spring/autumn:

- Ringed plover, *Charadrius hiaticula*; Common redshank, *Tringa totanus tetanus*.

Species/populations with peak counts in winter:

- Dark-bellied brent goose, *Branta bernicla bernicla*; Black-tailed godwit, *Limosa limosa islandica*.

Species/populations identified subsequent to designation for possible future consideration under criterion 6:

- Grey plover, *Pluvialis squatarola*

Conservation objectives

None available.

Pressures and threats

As for Hamford Water SPA above.

Medway Estuary and Marshes SPA

Site area: 4684.36 ha.

Overview of site and its location

The Greater Thames Complex consists of the Thames Estuary and Marshes SPA, the Medway Estuary SPA, the Swale SPA and Benfleet & Southend Marshes SPA. The Medway Estuary feeds into and lies on the south side of the outer Thames Estuary in Kent, south-east England. It forms a single tidal system with the Swale and joins the Thames Estuary between the Isle of Grain and the Isle of Sheppey. The Swale is an estuarine area that separates the Isle of Sheppey from the Kent mainland and joins the Medway to the west. Benfleet and Southend Marshes is an estuarine area on the Essex side of the Thames Estuary. These four sites contain a wide diversity of coastal habitats, such as grazing marsh, saltmarsh and mud/sandflat and eelgrass beds that support important numbers of waterbirds throughout the year. Wintering birds that use these estuaries include grebes, geese, ducks and waders whilst in summer breeding birds can be found, such as waders and terns. The area is also important for spring and autumn migration periods.

Qualifying Features

Supports the following Waterbird assemblage/breeding bird assemblage:

- *Branta bernicla bernicla*, Dark-bellied brent goose (Non-breeding); *Tadorna tadorna*, Common shelduck (Non-breeding); *Anas acuta*, Northern pintail (Non-breeding); *Recurvirostra avosetta*, Pied avocet (Breeding); *Recurvirostra avosetta*, Pied avocet (Non-breeding); *Charadrius hiaticula*, Ringed plover (Non-breeding); *Pluvialis squatarola*, Grey plover (Non-breeding); *Calidris canutus*, Red knot (Non-breeding); *Calidris alpina alpina*, Dunlin (Non-breeding); *Tringa tetanus*, Common redshank (Non-breeding); *Sterna albifrons*, Little tern (Breeding).

Additional Qualifying Features Identified by the 2001 UK SPA Review:

- *Limosa limosa islandica*, Black-tailed godwit (Non-breeding).

Conservation objectives

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified, and subject to natural change;

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.

Pressures and threats

Coastal squeeze

Coastal defences exist along much of the coastline here. Sea level rise is also occurring. It is therefore certain that if circumstances do not change, much of the supporting habitats of the SPA birds will be lost/degraded through processes such as: coastal squeeze; sedimentation rates' inability to keep pace with sea level rise; and reduced exposure (the extent and duration) of mudflats and sandflats.

Public access/disturbance

Breeding and overwintering waterbirds are susceptible to human disturbance from a range of land- and water-based activities, including: boating and watersports; walking; bait-digging; fishing, and wildfowling. Some activities such as powerboating, may produce physical disturbance to habitats. Public access, (especially dog walking and recreational boating) was identified as a medium risk during the 2009 EMS risk review project and this activity is still occurring. Moderate levels of disturbance in less sensitive

locations may have no significant effect on the numbers of birds using the SIP area but the types, levels and locations of potentially disturbing activities are constantly changing. Managing the changes to minimise the risk of disturbance impacts will require a better understanding of which species and habitats are most susceptible, which types of activity are most disturbing, and which locations and times of year are most sensitive. There is inadequate information to provide appropriate management.

Invasive species

Non-native invasive species such as sea squirt and Pacific oyster are spreading along the Kent coast and could begin to impact on the Swale. Sea squirt has been found in the Medway, and Pacific oysters are regarded as increasing in the Essex-Southend area. These species threaten habitats due to their ability to smother substrate and other sessile organisms. There is no good understanding of the overall distribution of these species in this site. Assessment is needed in key areas of ports and marinas, where introductions tend to first occur.

Changes in species distributions

There is a decline in population size for some of the bird species on some of the SPAs¹⁸. These are likely to be influenced by a number of factors which may vary across the four SPAs. Some of these influences are site-based as described in other parts of this Plan and some relate to wider, broad-scale changes such as wintering species distributions and effects from breeding grounds outside the UK. A greater understanding of the relative importance of site-based and wider influences is required in order to identify the potential for further actions that might halt declines, restore populations or identify scenarios where it is thought unlikely that site-based measures will reverse population declines.

Fisheries: Commercial marine and estuarine

The extent and impacts of fisheries on private grounds, particularly in the Swale Estuary, needs to be better understood. There are particular concerns regarding the dredging of shellfish within the SPAs which are a food source for the protected birds.

Invasive Species

Freshwater non-native invasive species such as pennywort, crassula, parrot's feather etc. can engulf ditches, leading to loss of habitat for diving ducks. Although there are some mechanisms in place to ensure ditch management, more baseline information is needed, particularly on those species for which ditch management is not the solution.

Invasive Species

Spartina anglica may be increasing at the expense of other saltmarsh habitats with adverse implications for SPA bird roost areas in Benfleet & Southend Marshes.

Vehicles: illicit

The illicit use of motor vehicles (often bikes) occurs across the area. This can cause disturbance to SPA birds. This activity was identified as a medium risk during the 2009 EMS risk review project and is still occurring. Whilst various mechanisms are in place to prevent the use of vehicles they are clearly not entirely effective.

Fisheries: Commercial marine and estuarine

Commercial fishing activities categorised as 'amber or green' under Defra's revised approach to commercial fisheries in European Marine Sites require assessment and (where appropriate) management. This assessment will be undertaken by Kent & Essex IFCA. For activities categorised as 'green', these assessments should take account of any in-combination effects of amber activities, and/or appropriate plans or projects, in the site.

Air Pollution: risk of atmospheric nitrogen deposition

Nitrogen deposition exceeds site-relevant critical loads.

¹⁸ Cook A.S.C.P., Barimore C., Holt C.A., Read W.J. & Austin G.E. 2013. Wetland Bird Survey Alerts 2009/2010: Changes in numbers of wintering waterbirds in the Constituent Countries of the United Kingdom, Special Protection Areas (SPAs) and Sites of Special Scientific Interest (SSSIs). BTO Research Report 641. BTO, Thetford.

Medway Estuary and Marshes Ramsar site

Site area: 4684.36 ha.

Overview of site and its location

As for Medway Estuary and Marshes SPA above.

Qualifying Features

Site holds several nationally scarce plants, including

- sea barley *Hordeum marinum*; curved hard-grass, *Parapholis incurva*; annual beard-grass, *Polypogon monspeliensis*; Borrer's saltmarsh-grass *Puccinellia fasciculata*; slender hare`s-ear *Bupleurum tenuissimum*; sea clover *Trifolium squamosum*; saltmarsh goose-foot *Chenopodium chenopodioides*; golden samphire *Inula crithmoides*; perennial glasswort *Sarcocornia perennis*; and one-flowered glasswort *Salicornia pusilla*.

A total of at least twelve British Red Data Book species of wetland invertebrates have been recorded on the site including

- ground beetle *Polistichus connexus*; a fly *Cephalops perspicuus*; a dancefly *Poecilobothrus ducalis*; a fly *Anagnota collini*; a weevil *Baris scolopacea*; a water beetle *Berosus spinosus*; a beetle *Malachius vulneratus*; a rove beetle *Philonthus punctus*; the ground lackey moth *Malacosoma castrensis*; a horsefly *Atylotus latistriatus*; a fly *Campsicnemus magius*; a soldier beetle; *Cantharis fusca*; a crane fly *Limonia danica*.

A significant number of non-wetland British Red Data Book species also occur.

The Site also supports the following internationally important waterbird assemblage:

- Grey plover, *Pluvialis squatarola*; Common redshank, *Tringa totanus totanus*; Dark-bellied brent goose, *Branta bernicla bernicla*; Common shelduck, *Tadorna tadorna*; Northern pintail, *Anas acuta*; Ringed plover, *Charadrius hiaticula*; Red knot *Calidris canutus islandica*; Dunlin *Calidris alpina alpina*

Species/populations identified subsequent to designation for possible future consideration under criterion 6:

- Black-tailed godwit, *Limosa limosa islandica*.

Conservation objectives

None available.

Pressures and threats

As for Medway Estuary and Marshes SPA above.

Stour and Orwell Estuaries SPA

Site area: 3676.92 ha.

Overview of site and its location

The Stour and Orwell estuaries straddle the eastern part of the Essex/Suffolk border. The estuaries include extensive mud-flats, low cliffs, saltmarsh and small areas of vegetated shingle on the lower reaches. The site also includes areas of low-lying grazing marsh at Shotley Marshes on the south side of the Orwell and at Cattawade Marshes at the head of the Stour. In summer, the site supports important numbers of breeding Avocet *Recurvirostra avosetta*, while in winter it holds major concentrations of waterbirds, especially geese, ducks and waders.

Qualifying Features

Annex I species:

- Over winter: Hen Harrier, *Circus cyaneus*

This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:

- Over winter: Black-tailed Godwit, *Limosa limosa islandica*; Dunlin, *Calidris alpina alpina*; Grey Plover, *Pluvialis squatarola*; Pintail, *Anas acuta*; Redshank, *Tringa tetanus*; Ringed Plover, *Charadrius hiaticula*; Shelduck, *Tadorna tadorna*; Turnstone, *Arenaria interpres*

The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl including:

- Cormorant, *Phalacrocorax carbo*; Pintail, *Anas acuta*; Ringed Plover, *Charadrius hiaticula*; Grey Plover, *Pluvialis squatarola*; Dunlin, *Calidris alpina alpina*; Black-tailed Godwit, *Limosa limosa islandica*; Redshank, *Tringa tetanus*; Shelduck, *Tadorna tadorna*; Great Crested Grebe, *Podiceps cristatus*; Curlew, *Numenius arquata*; Dark-bellied Brent Goose, *Branta bernicla bernicla*; Wigeon, *Anas Penelope*; Goldeneye, *Bucephala clangula*; Oystercatcher, *Haematopus ostralegus*; Lapwing, *Vanellus vanellus*; Knot, *Calidris canutus*; Turnstone, *Arenaria interpres*.

Conservation objectives

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified, and subject to natural change;

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.

Pressures and threats

Coastal squeeze

Coastal defences exist along much of the Orwell coastline. Sea level rise is also occurring. It is therefore certain, that if circumstances do not change, much of the supporting habitats of the SPA birds will be lost/degraded through processes such as coastal squeeze; sedimentation rates inability to keep pace with sea level rise; and reduced exposure (extent and duration) of mudflats/sandflats. Seawalls afford little scope for natural adaption to sea level rise.

Public access/disturbance

Breeding and overwintering waterbirds are susceptible to human disturbance from a range of land- and water-based activities, including: boating and watersports; walking; bait-digging; fishing; wildfowling, and military overflight training. Some activities, such as powerboating, may produce physical disturbance to habitats. Moderate levels of disturbance in less sensitive locations may have no significant effect on the numbers of birds using the SIP area but the types, levels and locations of potentially disturbing activities are constantly changing. A better understanding will be required of: which species and habitats are most susceptible; which types of activity are most disturbing; and which locations and times of year are most sensitive in order to manage change, with intervention as necessary in order to minimise the risks of disturbance impacts.

Changes in species distributions

Numbers of some species of birds are declining on the Stour and Orwell Estuaries. This may be related to international changes in distribution and/or population levels related to climate change. This includes climatic variables and habitat quality issues at breeding grounds outside of the UK.

Invasive species

The growth in *Spartina anglica* may be impacting on *Spartina maritima* (part of the supporting habitat feature), adversely impacting on bird roosting and feeding areas of saltmarsh and mudflat.

Planning Permission: general

Several of the issues affecting the Stour and Orwell Estuaries and the management of disturbance effects on the sites are related to each other. Addressing them is likely to require an improved overview of the relative sensitivities of different habitats, species and locations to different types of development (perhaps summarised as sensitivity maps and matrices for the SIP area). Difficult issues include; a) Assessing the cumulative effects of numerous, small and often 'non-standard' developments. b) Development outside the SPA boundary can have negative impacts, particularly on the estuaries' birds. c) Assessing the indirect, 'knock-on' effects of proposals. d) Pressure to relax planning conditions on existing developments.

Air Pollution: impact of atmospheric nitrogen deposition

Nitrogen deposition exceeds the site-relevant critical load for ecosystem protection and hence there is a risk of harmful effects, but the sensitive features are currently considered to be in favourable condition on the site. This requires further investigation.

Inappropriate coastal management

Freshwater habitat areas behind failing seawall walls could be inundated by seawater which would remove this habitat from the site

Fisheries: Commercial marine and estuarine

Commercial fishing activities categorised as 'amber or green' under Defra's revised approach to commercial fisheries in European Marine Sites (EMS) require assessment and (where appropriate) management. This assessment will be undertaken by Kent & Essex IFCA and Eastern IFCA. For activities categorised as 'green', these assessments should take account of any in-combination effects of amber activities, and/or appropriate plans or projects, in the site.

Stour and Orwell Estuaries Ramsar site

Site area: 3676.92 ha.

Overview of site and its location

As for Stour and Orwell Estuaries SPA above.

Qualifying Features

Species/populations with peak counts in spring/autumn:

- Ringed plover, *Charadrius hiaticula*; Common redshank, *Tringa totanus tetanus*.

Species/populations with peak counts in winter:

- Dark-bellied brent goose, *Branta bernicla bernicla*; Black-tailed godwit, *Limosa limosa islandica*

Species/populations identified subsequent to designation for possible future consideration under criterion 6:

- Grey plover, *Pluvialis squatarola*

Conservation objectives

None available.

Pressures and threats

As for Stour and Orwell Estuaries SPA above.

Thames Estuary and Marshes SPA

Site area: 4838.94 ha.

Overview of site and its location

The Greater Thames Complex consists of the Thames Estuary and Marshes SPA, the Medway Estuary SPA, the Swale SPA and Benfleet & Southend Marshes SPA. The Medway Estuary feeds into and lies on the south side of the outer Thames Estuary in Kent, south-east England. It forms a single tidal system with the Swale and joins the Thames Estuary between the Isle of Grain and the Isle of Sheppey. The Swale is an estuarine area that separates the Isle of Sheppey from the Kent mainland and joins the Medway to the west. Benfleet and Southend Marshes is an estuarine area on the Essex side of the Thames Estuary. These four sites contain a wide diversity of coastal habitats, such as grazing marsh, saltmarsh and mud/sandflat and eelgrass beds that support important numbers of waterbirds throughout the year. Wintering birds that use these estuaries include grebes, geese, ducks and waders whilst in summer breeding birds can be found, such as waders and terns. The area is also important for spring and autumn migration periods.

Qualifying Features

Supports the following internationally important waterbird assemblage:

- Circus cyaneus, Hen harrier (Non-breeding); Recurvirostra avosetta, Pied avocet (Non-breeding); Charadrius hiaticula, Ringed plover (Non-breeding); Pluvialis squatarola, Grey plover (Non-breeding); Calidris canutus, Red knot (Non-breeding); Calidris alpina alpina, Dunlin (Non-breeding); Limosa limosa islandica, Black-tailed godwit (Non-breeding); Tringa tetanus, Common redshank (Non-breeding).

Conservation objectives

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified, and subject to natural change;

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.

Pressures and threats

Coastal squeeze

Coastal defences exist along much of the coastline here. Sea level rise is also occurring. It is therefore certain that if circumstances do not change, much of the supporting habitats of the SPA birds will be lost/degraded through processes such as: coastal squeeze; sedimentation rates' inability to keep pace with sea level rise; and reduced exposure (the extent and duration) of mudflats and sandflats.

Public access/disturbance

Breeding and overwintering waterbirds are susceptible to human disturbance from a range of land- and water-based activities, including: boating and watersports; walking; bait-digging; fishing, and wildfowling. Some activities such as powerboating, may produce physical disturbance to habitats. Public access, (especially dog walking and recreational boating) was identified as a medium risk during the 2009 EMS risk review project and this activity is still occurring. Moderate levels of disturbance in less sensitive locations may have no significant effect on the numbers of birds using the SIP area but the types, levels and locations of potentially disturbing activities are constantly changing. Managing the changes to

minimise the risk of disturbance impacts will require a better understanding of which species and habitats are most susceptible, which types of activity are most disturbing, and which locations and times of year are most sensitive. There is inadequate information to provide appropriate management.

Invasive species

Non-native invasive species such as sea squirt and Pacific oyster are spreading along the Kent coast and could begin to impact on the Swale. Sea squirt has been found in the Medway, and Pacific oysters are regarded as increasing in the Essex-Southend area. These species threaten habitats due to their ability to smother substrate and other sessile organisms. There is no good understanding of the overall distribution of these species in this site. Assessment is needed in key areas of ports and marinas, where introductions tend to first occur.

Changes in species distributions

There is a decline in population size for some of the bird species on some of the SPAs (Cook et al. 2013*). These are likely to be influenced by a number of factors which may vary across the four SPAs. Some of these influences are site-based as described in other parts of this Plan and some relate to wider, broad-scale changes such as wintering species distributions and effects from breeding grounds outside the UK. A greater understanding of the relative importance of site-based and wider influences is required in order to identify the potential for further actions that might halt declines, restore populations or identify scenarios where it is thought unlikely that site-based measures will reverse population declines.

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

Fisheries: Commercial marine and estuarine

The extent and impacts of fisheries on private grounds, particularly in the Swale Estuary, needs to be better understood. There are particular concerns regarding the dredging of shellfish within the SPAs which are a food source for the protected birds.

Invasive Species

Freshwater non-native invasive species such as pennywort, crassula, parrot's feather etc. can engulf ditches, leading to loss of habitat for diving ducks. Although there are some mechanisms in place to ensure ditch management, more baseline information is needed, particularly on those species for which ditch management is not the solution.

Invasive Species

Spartina anglica may be increasing at the expense of other saltmarsh habitats with adverse implications for SPA bird roost areas in Benfleet & Southend Marshes.

Vehicles: illicit

The illicit use of motor vehicles (often bikes) occurs across the area. This can cause disturbance to SPA birds. This activity was identified as a medium risk during the 2009 EMS risk review project and is still occurring. Whilst various mechanisms are in place to prevent the use of vehicles they are clearly not entirely effective.

Fisheries: Commercial marine and estuarine

Commercial fishing activities categorised as 'amber or green' under Defra's revised approach to commercial fisheries in European Marine Sites require assessment and (where appropriate) management. This assessment will be undertaken by Kent & Essex IFCA. For activities categorised as 'green', these assessments should take account of any in-combination effects of amber activities, and/or appropriate plans or projects, in the site.

Air Pollution: risk of atmospheric nitrogen deposition

Nitrogen deposition exceeds site-relevant critical loads.

Thames Estuary and Marshes Ramsar site

Site area: 4,838.94 ha.

Overview of site and its location

As for Thames Estuary and Marshes SPA above.

Qualifying Features

The site supports one endangered plant species and at least 14 nationally scarce plants of wetland habitats.

The site also supports more than 20 British Red Data Book invertebrates. Assemblages of international importance 45118 waterfowl including the following species:

- Ringed plover, *Charadrius hiaticula*; Black-tailed godwit, *Limosa limosa islandica*; Grey plover, *Pluvialis squatarola*; Red knot, *Calidris canutus islandica*; Dunlin, *Calidris alpina alpina*; Common redshank, *Tringa totanus tetanus*.

Conservation objectives

None available.

Pressures and threats

As for Thames Estuary and Marshes SPA above.

Appendix 2

Review of other plans and projects

County or district level plans providing for development

Brentwood Borough Council Local Plan	
Plan Owner/ Competent Authority:	Brentwood Borough Council
Related work HRA/AA:	None available - Brentwood Local Plan 2015-2030 Preferred Options published in 2013 but no HRA work yet carried out. Previous Local Plan published in 2005 was not subject to HRA.
Notes on Plan documents:	Brentwood Local Plan 2015-2030 Preferred Options published in July 2013. Development provided for includes 3,500 new dwellings during 2015-2030.
Conclusions on potential effects of relevance to European sites within scope of HRA of Basildon Core Strategy	
The Brentwood Local Plan 2015-2030 Preferred Options state that whilst the results of the HRA Screening have yet to be confirmed, no significant effect is anticipated. Given the distance of the Plan area from any of the European sites within the scope of the HRA for the Basildon Core Strategy, in-combination effects are judged unlikely in any event.	

Castle Point Borough Council Local Plan	
Plan Owner/ Competent Authority:	Castle Point Borough Council
Related work HRA/AA:	Habitat Regulation Assessment Screening Assessment Pre-consultation New Local Plan November 2013
Notes on Plan documents:	A draft New Local Plan was made available for consultation from the 24th January until the 28th March 2014 Development referred to in the HRA includes at least 4,035 new dwellings.
Conclusions on potential effects of relevance to European sites within scope of HRA of Basildon Core Strategy	
<p>Coastal squeeze: <i>Policy CC2: Canvey Coastal Zone Management Area</i> requires the maintenance and enhancement of flood defences on Canvey Island to protect the resident population of around 40,000 people. This would result in coastal squeeze affecting the extent of the Benfleet and Southend Marshes SPA, and requiring compensatory provision of habitat. It is not possible to achieve this in Castle Point alone due to its size. The policy in the New Local Plan is based on the policy in the Thames Estuary 2100 Plan. This plan for the Thames Estuary identifies both areas that need protection from flooding and areas for new habitat creation to compensate for the loss of European sites through coastal squeeze. The impacts of policy CC2 are therefore addressed in combination with the Thames Estuary 2100 Plan. The Greater Thames Marshes Nature Improvement Area Business Plan sets out mechanisms for delivering these compensatory habitats.</p> <p>Physical disturbance, biological disturbance and water pollution from shipping: <i>Policy E10: Port Related Activities</i> had the potential to allow for additional shipping activity in the Thames Estuary which may cause direct disturbance to estuary and marshland habitat through increased wash from ships, and also through biological disturbance through increased risk of the introduction of invasive species on the hulls of ships. The Local Plan HRA has recommended policy changes to Policy E10 to reduce the potential harm; residual risks will need to be addressed via project level HRA which may reduce the scope of development which can occur at South Canvey.</p> <p>Hub airport (in-combination project): Any proposals for a hub airport in the Thames Estuary will have a significant in-combination effect on European sites. If such</p>	

Castle Point Borough Council Local Plan

proposals are pursued by the Government it will be necessary to amend the New Local Plan. However, it is likely that it take such time for any decision on this matter to be made, and many years before such a proposal could be delivered. It does not therefore threaten the integrity of the New Local Plan at this time.

Recreational disturbance (in-combination with other plans and projects): There is widespread acknowledgement amongst districts that good quality open space provision within new developments minimises recreational pressure on European sites. This will need to be achieved through engagement with other districts during their plan-making process (Duty to Cooperate).

Chelmsford City Council Core Strategy and Development Control Policies DPD

Plan Owner/ Competent Authority:	Chelmsford City Council
Related work HRA/AA:	Appropriate Assessment of the Chelmsford Core Strategy and Development Control Policies Submission Document DPD November 2006 Core Strategy and Development Control Policies Focused Review Sustainability Appraisal Report and HRA Screening Final Report February 2013
Notes on Plan documents:	2006 Chelmsford Core Strategy and Development Control Policies Submission Document DPD plus 2013 'Focused Review' which made changes to the DPD to improve compatibility with the NPPF. Development provided for includes 16,170 new houses during 2001-2021.

Conclusions on potential effects of relevance to European sites within scope of HRA of Basildon Core Strategy

The HRA Screening of the Submission DPD identified likely significant effects from four development control policies:

- *DC3: Managing development density in different locations*, due to the proximity of housing development provided for at South Woodham Ferrers to Crouch and Roach Estuaries SPA and Ramsar site and consequent potential for recreational disturbance.
- *DC54: Promotion of employment clusters*, due to the proximity of employment development provided for at South Woodham Ferrers to Essex Estuaries SAC and Crouch and Roach Estuaries SPA and Ramsar site and consequent potential for water pollution, direct habitat loss and recreational disturbance.
- *DC55: Location of business development*, due to the proximity of employment development provided for at Battlesbridge an South Woodham Ferrers to Essex Estuaries SAC and Crouch and Roach Estuaries SPA and Ramsar site and consequent potential for water pollution, direct habitat loss and recreational disturbance.
- *DC56: Industrial and warehouse development*, due to the proximity of employment development provided for at South Woodham Ferrers to Essex Estuaries SAC and Crouch and Roach Estuaries SPA and Ramsar site and consequent potential for water pollution, direct habitat loss and recreational disturbance.

Recommended policy changes requiring protection of internationally designated nature conservation sites were deemed sufficient to address these potential effects.

The HRA Screening of the 2013 'Focused Review' of the Core Strategy did not identify any likely significant effects on European sites from the policy changes alone. The contribution of the policy changes to potential in-combination effects with other plans and projects was considered not significant.

Gravesham District Local Plan Core Strategy (Kent)	
Plan Owner/ Competent Authority:	Gravesham Borough Council
Related work HRA/AA:	HRA of Proposed Submission Core Strategy December 2012 HRA Addendum Report December 2013
Notes on Plan documents:	The Local Plan Core Strategy and Policies Map were adopted on 30 September 2014. Development provided for includes at least 6,170 new dwellings during 2011-2028.
Conclusions on potential effects of relevance to European sites within scope of HRA of Basildon Core Strategy	
The following types of potential likely significant effect were identified:	
<ul style="list-style-type: none"> Recreational disturbance: the HRA screening identified potential likely significant effects on Medway Estuary and Marshes SPA and Ramsar site and Thames Estuary and Marshes SPA and Ramsar site in-combination with development in surrounding districts but Basildon was not identified as one of these since all of the former and almost all of the latter European site are separated from Basildon by the Thames Estuary with the nearest fixed link crossing point, the Dartford Tunnel a significant distance upstream. Significant effects on integrity were ruled out by reliance on existing Core Strategy policies requiring provision of alternative recreation space and on recommended additions to the Core Strategy, including commitments to implement the findings of the bird population and visitor studies commissioned by the North Kent Environmental Planning Group and to adopt a flexible approach that enables development plan documents to be reviewed in the light of emerging evidence. Water levels and quality: the HRA screening identified potential likely significant effects on Medway Estuary and Marshes SPA and Ramsar site due to cumulative increases in water abstraction, consented discharges and surface water run-off in-combination with development in surrounding districts, although Basildon was not identified as one of these. Significant effects on integrity were ruled out by reliance on existing Core Strategy policies to minimise the impact of drainage from new development and reduce the impact of new development on water resources as well as regulatory processes operated by the Environment Agency. 	

Maldon District Local Development Plan	
Plan Owner/ Competent Authority:	Maldon District Council
Related work HRA/AA:	Maldon District Council Pre-Submission Local Development Plan 2014 - 2029 Sustainability Appraisal Report incorporating Strategic Environmental Assessment and Habitats Regulations Assessment
Notes on Plan documents:	The Maldon District Local Development Plan was submitted to the Secretary of State for Examination-in-Public on 25 April 2014. Development provided for in the Draft Plan includes at least 4,410 dwellings during 2014-2029.
Conclusions on potential effects of relevance to European sites within scope of HRA of Basildon Core Strategy	
A number of individual policies were identified as having potential likely significant effects:	
<ul style="list-style-type: none"> <i>S2 Strategic Growth</i>: Potential pressure from housing growth on water resources and water quality could affect condition of Blackwater Estuary SPA and Ramsar site and Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site but adequate protection judged to exist from the Environment Agency's abstraction and effluent discharge consenting regimes. Potential recreational pressure from additional housing to the south of Maldon town and north 	

Maldon District Local Development Plan

of Heybridge but unlikely to significantly increase existing recreational pressure from these settlements and mitigation provided in the form of additional open space.

- *Policy H7 Agricultural and Essential Workers' Accommodation:* The provision of accommodation for agricultural workers has the potential to have a likely significant effect on the international sites depending on the location of these developments. The creation of new development could cause damage to habitats if located within the international sites, or noise and visual disturbance from the proximity of the buildings to the international sites. Whilst locations are not known at this time it is considered that the predominantly estuarine nature of the international sites means they are not suitable for development due to access, risk of flooding and lack of suitable land. In addition, this development is intended to accommodate small numbers of people, therefore the associated noise and visual disturbance on the international sites would be minimal. It is therefore considered that this policy is not likely to have a significant effect on the sites.
- *Policy N1 Green Infrastructure Network:* Through the creation of a green infrastructure network across the District there is the potential that this policy could result in increased numbers of people along the estuaries, causing a visual and noise disturbance.,

Concluded that there will not be any significant adverse effects on the integrity of European sites alone or in-combination from the Maldon District LDP.

Medway Borough (Kent)

Plan Owner/ Competent Authority:	Medway Borough Council
Related work HRA/AA:	N/A
Notes on Plan documents:	Medway Core Strategy was withdrawn from examination in November 2013 following Natural England's designation of one of the Plan's strategic allocations as a SSSI

Conclusions on potential effects of relevance to European sites within scope of HRA of Basildon Core Strategy

N/A

Rochford District Core Strategy

Plan Owner/ Competent Authority:	Rochford District Council
Related work HRA/AA:	Habitats Regulations Assessment Screening of Rochford Core Strategy, January 2010
Notes on Plan documents:	Core Strategy adopted December 2011 Development provided for includes a minimum of 4,600 dwellings during 2001-2021.

Conclusions on potential effects of relevance to European sites within scope of HRA of Basildon Core Strategy

The following types of potential likely significant effect were identified:

- Recreational disturbance: Potential for effects reduced by the fact that the west of the District contains the majority of the existing population and settlements

Rochford District Core Strategy

and that new development will be focused on previously developed land in and around these settlements. Provision for new open space and alternative recreational opportunities judged sufficient to rule out likely significant effects.

- Air pollution: As for disturbance, potential for likely significant effects due to air pollution from road traffic reduced by the distance between centres of population and European sites in the District. Core strategy policies to protect air quality, existing Council monitoring of air quality and lack of evidence that European sites are vulnerable to poor air quality judged sufficient to rule out likely significant effects.
- Water resources: Likely significant in-combination effects on European sites due to increased water abstraction to serve new development and deficit during dry years identified by the Essex Thames Gateway Water Cycle Study 2009 Scoping Study. To avoid likely significant in-combination effects, HRA recommended that wording was inserted into Core Strategy specifying that development proposals must ensure that their water supply needs can be met without adverse effects on the integrity of a European site and that the findings of the HRA Screening were reviewed once the final stages of the Water Cycle Study were completed.
- Water quality: Uncertainty meant that likely significant in-combination effects could not be ruled out on Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site due to increased pressure on sewer and WwTW capacity from new development. To avoid likely significant in-combination effects, HRA recommended that Annual Monitoring Report incorporates a requirement for annual monitoring by the EA of the chemical and biological quality of the Crouch and Roach Estuaries to address the uncertainty. If the monitoring reveals that water quality has deteriorated, the Council should consult with the EA and NE to determine the most appropriate course of action.

Swale Borough Local Plan Part I (Kent)

Plan Owner/ Competent Authority:	Swale Borough Council
Related work HRA/AA:	Bearing Fruits 2031: The Swale Borough Local Plan Part 1: Submission Version Habitats Regulations Assessment Screening, April 2015
Notes on Plan documents:	The Swale Draft Local Plan was submitted to the Planning Inspectorate on the 20 April 2015. Development provided for includes 10,800 dwellings for 2010-2031.

Conclusions on potential effects of relevance to European sites within scope of HRA of Basildon Core Strategy

The following types of potential likely significant effect were identified:

Disturbance: There is a risk that there may be disturbance to the site with the construction employment and commercial developments. However, Policy AS 1 makes provision to address environmental mitigation issues and Policy ST 5 makes provision to manage recreational pressure, noise and other disturbances arising from development to safeguard international biodiversity sites and provides provision for protecting the SPA and Ramsar sites from adverse effects.

Recreational pressure: A detailed study has been undertaken which investigated disturbance of birds for which the North Kent Estuaries (including The Swale SPA/Ramsar site and Medway Estuary & Marshes SPA/ Ramsar site) were designated. There is considered to be no Likely Significant Effect in terms of recreation, as a result of the Swale Borough Local Plan due to the policy protection measures in place and the specific commitments made within the Local Plan to deliver the SAMMS.

Loss of supporting habitat: Land at Neatscourt, Queenborough contains grazing marsh or possible grazing marsh habitat. It is understood that Land at Neatscourt, Queenborough (Policy A1) has outline consent and is already under construction. The delivery of compensatory habitat for loss of grazing marsh (including the size and location) has been agreed and identified in the planning permission.

Air Quality: For a distance of approximately 4km, the Swale SPA/Ramsar site lies within 200m of the A249. Development of 10,800 dwellings in Swale will result in an

Swale Borough Local Plan Part I (Kent)

increase in traffic flows. In addition, proposals for new minerals and waste facilities being developed for the Kent Minerals and Waste Plan could lead to a further increase in nitrogen levels. However, the Local Plan contains a number of measures to reduce reliance on the private car and therefore improve air quality. On balance, it is therefore considered that there would be no Likely Significant Effect associated with air quality

Water Quality: It is concluded that sewerage capacity in Swale is not a major issue compared to other Local Authority areas. While nutrient levels are high within the various estuaries around the greater Thames Estuary, this does not result in the smothering macro-algal growth. There will therefore be no Likely Significant Effect on the features of the SPA due to increased wastewater disposal as a result of development of the 10,800 new homes and new commercial floorspace set out in the Swale Local Plan.

It is considered that an adequate policy framework is in place within the Local Plan to enable a conclusion that no Likely Significant Effects upon any European designated sites will result as a consequence of the Swale Borough Council Local Plan.

Thurrock Council Core Strategy

Plan Owner/ Competent Authority:	Thurrock Council
Related work HRA/AA:	Thurrock Proposed Submission Core Strategy and Policies for Management of Development DPD Habitats Regulations Assessment August 2010; HRA Addendum Report for Core Strategy Focussed Review, May 2013.
Notes on Plan documents:	Core Strategy Adopted December 2011 plus Focussed Review adopted January 2015; the Main Modifications proposed by the latter have been subject to an HRA addendum. Development provided for includes 13,550 new dwellings during 2009-2021 plus an indicative 4,750 during 2021-2026.

Conclusions on potential effects of relevance to European sites within scope of HRA of Basildon Core Strategy

The following types of potential likely significant effect were identified but adverse effects on site integrity were ruled out after full Appropriate Assessment:

Coastal squeeze: Potential effects on Thames Estuary and Marshes SPA and Ramsar ruled out due to development being more than 700 m from the European site and caveats within policies on waste and renewable energy development requiring avoidance of effects on European sites.

Recreational disturbance: Potential effects on Thames Estuary and Marshes SPA and Ramsar site ruled out due to provision of alternative recreational facilities, including a country park, commitments to management of existing open space and provisions within Thurrock Green Grid Strategy for creation and maintenance of green space and access restrictions. Thurrock Council have committed to working with the Thames Estuary Partnership (TEP) in order to manage recreation and monitor disturbance, such that the need for any enhanced measures to manage waterborne access can be delivered at the appropriate time. The HRA recommended that these be developed further in conjunction with the TEP in a cohesive management strategy which may need to be informed by visitor surveys of the SPA to determine patterns of recreational use with Thurrock's contribution commensurate with its population size. Recreational disturbance to Essex Estuaries SAC and component Mid-Essex Coast SPA/Ramsar sites ruled out due to existing recreation management plans at some of these European sites and Thurrock Council's commitment to working with TEP.

Air quality: Air quality reductions were not considered to pose likely significant effects on the Thames Estuary and Marshes SPA and Ramsar site. A consented power station at Tilbury (Tilbury Green Power) had been assessed and found not to require HRA. Core Strategy policies allow for the possibility of further renewable energy and/or waste sites, especially at Tilbury or London Gateway which would need to be subject to environmental assessment that should include consideration of the need for project-level HRA.

Water quality: Thames Estuary and Marshes SPA and Ramsar site was not considered to be particularly vulnerable to the effects of smothering macro-algal growth that

Thurrock Council Core Strategy

nutrient enrichment has created in south coast waters. However, it was considered that reference should be included in the Core Strategy to the Thurrock Water Cycle Study and in particular to phasing of development in line with the WCS, in order to provide security that adverse effects on European sites would not result. Essex Estuaries SAC and component Mid-Essex Coast SPA/Ramsar also not considered particularly vulnerable to nutrient enrichment and their location in relation to the Plan area means that large dilution factors will apply. As for Thames Estuary and Marshes SPA and Ramsar site, the HRA recommended reference be made in the Plan to phasing of development in line with the WCS.

London Gateway Port (in-combination project): The policies of the Core Strategy were considered to have the potential for in-combination effects with the development of London Gateway Port on Thames Estuary and Marshes SPA and Ramsar site. Mitigation measures have been approved for this scheme, and the HRA concluded that provided that these are adopted, there is no residual in combination impact likely through disturbance, reduced air quality reduced water quality or coastal squeeze.

Essex Minerals Local Plan

Plan Owner/ Competent Authority:	Essex County Council
Related work HRA/AA:	Essex County Council Replacement Minerals Local Plan: Pre Submission Draft Habitats Regulations Assessment Report November 2012
Notes on Plan documents:	The Essex Minerals Local Plan was adopted on 8 July 2014. Plan sets out the broad locations where future mineral extraction and associated development will be preferred, and the areas where mineral extraction is discouraged, preferred sites and development management policies.

Conclusions on potential effects of relevance to European sites within scope of HRA of Basildon Core Strategy

Air quality: Likely significant effects from increased heavy goods vehicle traffic on roads in proximity to European sites ruled out following amendment of the Plan to include supporting text requiring an air quality analysis where any proposal would result in an increase of more than 200 HGV movements per day within 200 m of a European site.

Predation: Following completion of mineral extraction it is common for minerals sites to be used for landfill. Landfill sites can attract large number of birds such as gulls or crows which can have an adverse predation effect on nesting birds at wildlife sites within 5 km of the landfill (particularly ground nesting species). Preferred minerals sites allocated by the Plan include ones within 5 km of Abberton Reservoir SPA and Ramsar site (wintering and passage waterfowl and cormorant populations sensitive to predation) and Colne Estuary (Mid-Essex Coast Phase 2) SPA and Ramsar site (little tern population particularly sensitive to predation). Likely significant predation effects were ruled out on the basis that the Plan adopt recommendations to prevent putrescible waste being sent for landfill at the relevant, preferred minerals sites.

Essex Waste Local Plan

Plan Owner/ Competent Authority:	Essex County Council
Related work HRA/AA:	Essex Waste Development Document – Preferred Approach Habitat Regulations Assessment – Screening Report, September 2011

Essex Waste Local Plan	
	Essex Waste Development Document – Potential Sites - Habitat Regulations Assessment Screening Report, September 2011
Notes on Plan documents:	Essex Replacement Waste Local Plan, The Preferred Approach 2013 The Waste Local Plan comprises the Waste Core Strategy, setting out the long-term direction for waste development and the plan to deliver this strategy; Development Management Policies for waste planning particularly when considering applications; Strategic Site Allocations for waste-related development; Non-Strategic Site Allocations for other preferred sites for waste processing plus any associated safeguarding and a Policies (previously Proposals) Map.
Conclusions on potential effects of relevance to European sites within scope of HRA of Basildon Core Strategy	
The HRA of Preferred Approaches ruled out likely significant effects on any European site, particularly due to the need to comply with a policy requirement for all waste management developments to avoid unacceptable impacts on internationally designated biodiversity sites.	
The HRA of potential waste sites was unable to rule out the following likely significant effects:	
Noise: Unable to rule out likely significant noise disturbance effects from waste recycling and storage operations at site W12 Ballast Quay/Fingringhoe and site W14 Alresford Quarry on wildfowl interest of Colne Estuary SPA/Ramsar site. Recommended that sites are either not taken forward or is subject to project level HRA. Noise effects on Colne Estuary SPA/Ramsar site were deemed less likely for sites L1 Towerfield/Fingringhoe, L2 Holmwood Farm/Fingringhoe, and L13R Wellwick, St Osyth but project level HRA was nevertheless recommended on a precautionary basis to rule out likely significant effects.	
Water quality: Unable to rule out likely significant water quality effects on European sites from increased shipping movements or dredging associated with site W12 Ballast Quay/Fingringhoe.	

Essex Local Transport Plan 3 2011-2026 (LTP3)	
Plan Owner/ Competent Authority:	Essex County Council
Related work HRA/AA:	HRA Screening Report June 2011
Notes on Plan documents:	Essex Transport Strategy: the Local Transport Plan for Essex, June 2011 Transport priorities for the Thames Gateway, the part of Essex in which Basildon is located, are: <ul style="list-style-type: none"> • Providing for and promoting access by sustainable modes of travel to new development areas; • Improving public transport links within and between the Thames Gateway towns (including the A13 Passenger Transport Corridor and South Essex Rapid Transport (SERT) schemes); • Improving the availability of sustainable travel choices and raising public awareness of these through travel planning; • Addressing maintenance, signing and broken links in the cycle network to improve conditions for cyclists and create a safer atmosphere for cycling. • Improving the attractiveness and ease of use of public spaces to support regeneration; • Improving journey time reliability on strategic inter-urban routes including the A127, A129, A130 and the A13;

Essex Local Transport Plan 3 2011-2026 (LTP3)

- Improving access to London Gateway port and Southend Airport.

Conclusions on potential effects of relevance to European sites within scope of HRA of Basildon Core Strategy

The protective approach specified by Policy 9 of the LTP3, the provision of policies which promote a modal shift away from private car use (Policies 4, 7, 8, 14 and 15), and the flexibility inherent in the Essex LTP3 which allows for manipulation of future plans and projects to avoid impacts on N2K sites, means that the ecological integrity of all Natura 2000 sites located within the zone of influence of the Essex LTP3 would not be adversely affected by the LTP3 or its policies.

Major infrastructure projects¹⁹

Perry's Farm, Isle of Grain, Kent

Plan Owner/ Competent Authority:	Planning Inspectorate
Related work HRA/AA:	Not yet carried out
Notes on project:	Proposed hazardous waste management facility at Perry's Farm on the Isle of Grain, Kent. Project information drawn from request for EIA Scoping Opinion. ²⁰

Conclusions on potential effects of relevance to European sites within scope of HRA of Basildon Core Strategy

Proposed waste management facility for the disposal of hazardous waste by landfill and the treatment of hazardous waste at a site on the Isle of Grain located approximately 500 m south of the River Thames. The request for an EIA Scoping Opinion identifies the possibility of indirect impacts on designated biodiversity sites in relation to noise, air quality, dust and hydrology. An HRA screening assessment will be conducted which will include the potential for likely significant effects on Thames Estuary and Marshes SPA and Ramsar site.

Tilbury Gas Fired Power Station, Thurrock

Plan Owner/ Competent Authority:	Planning Inspectorate
Related work HRA/AA:	Not yet carried out
Notes on Plan documents:	RWE npower is proposing to develop a new combined cycle gas turbine (CCGT) power station on the Tilbury Power Station site in Thurrock. The proposed new gas station would be known as Tilbury C and would replace the generating capacity of the currently operational Tilbury B coal-fired power station.

¹⁹ National Infrastructure Planning website <http://infrastructure.planningportal.gov.uk/>

²⁰ SLR Consulting, Perry's Farm Isle of Grain Request for Scoping Opinion, November 2013

Tilbury Gas Fired Power Station, Thurrock

Conclusions on potential effects of relevance to European sites within scope of HRA of Basildon Core Strategy

The site is 2.2 km from the Thames Estuary and Marshes SPA and Ramsar site and includes land which is known to support important populations of avocet and hen harrier (for which Thames Estuary SPA is designated)²¹. Potential types of in-combination effects on Thames Estuary and Marshes SPA and Ramsar site are uncertain until an HRA is carried out but may include loss of supporting habitat for internationally designated bird populations, noise, air quality, dust and hydrology.

London Paramount

Plan Owner/ Competent Authority:	Planning Inspectorate
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Related work HRA/AA:	Not yet carried out
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Notes on Plan documents:	The Entertainment Resort has been accepted by the UK Government as the first 'Business or Commercial Project' to be considered a Nationally Significant Infrastructure Project (NSIP). The overall site including the access corridor to the A2, totalling approximately 545 hectares, is principally based on the Swanscombe Peninsula on land to the east of Ingress Park, between the A226 and the River Thames.
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Conclusions on potential effects of relevance to European sites within scope of HRA of Basildon Core Strategy

The Thames Estuary and Marshes Special Protection Area and Ramsar wetland are approximately 7.5km to the east of the site. There is a possibility that the increased numbers of people in the wider area might affect these sites, however effects will remain uncertain until a HRA is carried out.

²¹ RWE npower, Environmental Impact Assessment Scoping Report for Proposed Tilbury C Combined Cycle Gas Turbine Power Station, July 2010.

⁴ London Paramount Entertainment Resort Environmental Impact Assessment Scoping Report London Resort Company Holdings November 2014

Appendix 3

Initial screening for potential likely significant effects

N.B. This initial screening does not represent the findings of the HRA Screening assessment as it only considers the potential for the development proposed by the policy in question to have likely significant effects before mitigation is taken into account. The extent to which these potential effects are mitigated by protective elements of the policy itself, other Local Plan policies or protective mechanisms outside of the Local Plan, and the resulting conclusions of the HRA Screening are described in **Chapter 4**.

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
ACHIEVING SUSTAINABLE DEVELOPMENT				
SD1	Strategic approach to sustainable development	Reduced water quality - treated wastewater or combined sewer overflows Increased recreation pressure	7, 9, 13	Together with Policy H1, this Policy establishes the total amounts of residential development to be provided in the Borough. Reasons for identifying the indicated types of likely significant effects from residential development within the Borough are discussed in Chapter 3 .
SD2	The settlement hierarchy and distribution of growth	None	5	Policy establishes the broad distribution of the development specified by Policy SD1, directing most development within or adjacent the three main towns. The locations for development are specified by other policies within the Local Plan which have been separately assessed below. Since there is nothing to suggest that the amounts of development specified by this policy could not be accommodated without likely significant effects no matter where they took place within the Borough, this policy is screened out on the basis that the potential effects of development are more appropriately assessed through the HRA of the subordinate policies.
SD3	Presumption in favour of sustainable development	None	1, 2	While this policy sets out a positive approach to development, the comprehensive policy framework provided by the Local Plan should ensure that development proposals are governed by more the more specific policies in the remainder of the Local Plan, the effects of which have been separately considered in the HRA.
BUILDING A STRONG, COMPETITIVE ECONOMY				
E1	Economic growth strategy	None	4, 5	This policy seeks to support 8,600 new jobs through provision of at least 49 ha of additional employment land, 38 ha within existing employment areas and 11 ha in eastern and western extensions to the A127 corridor, as well as providing broad support for economic growth. Employment sites within the Borough boundary will avoid direct habitat loss or damage to European sites since these are located outside of the Borough boundary Some sites also have higher fluvial flood risk than others and directing more development to these could result in a loss of flood storage and increase flood risk downstream at European sites; this is assessed via the HRA Screening of policies E5-E8 below and development could not occur through this strategic policy alone. In light of the type of development and the distance between potential development sites and European sites, other types of likely significant effect are not judged likely. Recommendation: Add a clause to this policy, similar to that in the strategic housing policy H1, stating that the provision of additional employment land will be phased to

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
				ensure that it is aligned with the provision of supporting infrastructure. (HRA Screening conclusion is not dependent on adoption of this recommendation)
E2	Existing employment areas for general B class uses	None	4	<p>Policy defines the existing employment areas to which employment development for existing employment areas specified by Policy E1 will be directed in the first instance.</p> <p>Employment sites within the Borough boundary will avoid direct habitat loss or damage to European sites since these are located outside of the Borough boundary</p> <p>In light of the type of development and the distance between potential development sites and European sites, other types of likely significant effect are not judged likely.</p>
E3	Existing employment area for research and development uses	None	4	<p>Policy directs some of the employment development specified by Policy E1 to the Ford Technical Centre and adjacent land at Dunton Fields on the north west edge of Basildon town, specifying that it must be for research and development.</p> <p>This development location will avoid direct habitat loss or damage to European sites since these are located outside of the Borough boundary</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites.</p> <p>In light of the type of development and the distance between potential development sites and European sites, other types of likely significant effect are not judged likely.</p>
E4	New employment sites	None	4, 5	<p>To the extent that suitable land for employment development cannot be identified in the existing employment areas specified by Policy E2, this policy directs it first to land west of Gardiners Lane South (to be developed in accordance with Policies H8 and E5) and Land at Terminus Drive, Pitsea (to be developed in accordance with Policy E6). If sufficient suitable employment land cannot be identified at these sites either, employment development will be supported at Land South west of A127 Dunton Interchange (to be developed in accordance with Policies H10 and E7) and Land to the East of Burnt Mills (to be developed in accordance with Policy E8).</p> <p>Employment sites within the Borough boundary will avoid direct habitat loss or damage to European sites since these are located outside of the Borough boundary</p> <p>Some sites also have higher fluvial flood risk than others and directing more development to these could result in a loss of flood storage and increase flood risk downstream at European sites; this is assessed via the HRA Screening of policies E5-E8 below and development could not occur through this strategic policy alone.</p> <p>In light of the type of development and the distance between potential development sites and European sites, other types of likely significant effect are not judged likely.</p>
E5	Land West of Gardiners Lane South, Basildon	Increased flood risk – impermeable surfaces	7, 9	<p>The policy identifies a site for employment development on the northern edge of Basildon town, in accordance with the broad distribution defined by Policy E4.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield</p>

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
				location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.
E6	Terminus Drive	Increased flood risk – impermeable surfaces	7, 9	<p>The policy identifies a site for employment development on the southern edge of Basildon town, in accordance with the broad distribution defined by Policy E4.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
E7	Dunton Extension	Increased flood risk – impermeable surfaces	7, 9	<p>The policy identifies a site for employment development on the western edge of Basildon town, in accordance with the broad distribution defined by Policy E4.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
E8	Land East of Burnt Mills, Basildon	Increased flood risk – impermeable surfaces	7, 9	<p>The policy identifies a site for employment development on the north east edge of Basildon town, in accordance with the broad distribution defined by Policy E4.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
E9	Rural enterprise sites	None	4	The policy retains existing rural enterprise sites in Basildon to be used for B1-B8 uses. As such development is to be guided towards existing areas used for business and development in these locations is not considered likely to be capable of significant effects on the European sites beyond the Borough boundary.
E10	Untidy industry zone	None	4, 5	The policy allows for development of untidy industry uses within in the Harvey Road and Archers Field area of the Burnt Mills Industrial Estate with proposals within the existing industrial areas to be assessed on as per their likely effects on nearby uses and the availability of sites within the Untidy Industry Zone. Untidy industry is not to be permitted outside of identified employment areas.
E11	Locations for employment development	None	2, 4, 5	The policy steers class-B development and employment generating sui generis uses towards allocated Employment Areas or Rural Enterprise Sites in Basildon. Employment development in these locations is not considered likely to give

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
				rise to significant effects on the European sites beyond the Borough boundary. The policy also requires that development within these areas does not contribute to pollution or disturbance while development of this type is only to be supported if it does not result in adverse impacts upon environmental quality. Individual projects would be subject to project level HRA, if relevant.
E12	Non B class uses in employment areas	None	1, 5	The policy addresses non B class uses in employment areas in Basildon. As such the policy itself would not lead to a greater level of development within the Borough but will rather support non-B class uses where the relevant criteria have been satisfied.
E13	Aligning skills and jobs	None	1	The policy encourages developments for employment use to include improvements to help support the betterment of skills levels amongst local residents. The policy is therefore not expected to lead to development in itself.
E14	Offices	None	4, 5	The policy makes provisions for new office B1 development follow a sequential test when identifying a suitable site with an existing centre or on an edge of centre location to be given priority. As such the policy would guide development towards locations which are not considered likely to give rise to significant effects on the European sites beyond the Borough boundary.
ENSURING THE VITALITY OF TOWN CENTRES				
R1	Retail and leisure strategy	None	4, 5	<p>Policy establishes the total amounts of retail, leisure and other main town centre use development to be provided in the Borough. The policy also prioritises development in identified existing centres (primarily Basildon, Billericay, Laindon, Pitsea and Wickford) rather than out of centre locations.</p> <p>Retail and leisure sites within the Borough boundary will avoid direct habitat loss or damage to European sites since these are located outside of the Borough boundary</p> <p>Some locations have higher fluvial flood risk than others and directing more development to these could result in a loss of flood storage and increase flood risk downstream at European sites; this is assessed via the HRA Screening of policies R2-R6 below and development could not occur through this strategic policy alone.</p> <p>In light of the type of development and the distance between potential development sites and European sites, other types of likely significant effect are not judged likely.</p>
R2	Basildon town centre regeneration	<p>Reduced water quality - treated wastewater or combined sewer overflows</p> <p>Increased recreation pressure</p>	7, 9	<p>The policy identifies Basildon town centre as the primary focus for all major retail and leisure development in the Borough, in accordance with the broad distribution defined by Policy R1. It further provides for development of 1,500-2,000 units, a further education college, business, community and open space uses.</p> <p>As explained under Policy R1, it is judged that the only potential likely significant effect from retail development in the Borough's town centres is increased downstream flood risk if they are built in flood storage areas (assumed to be Flood Zone 3). Basildon town centre is not within Flood Zone 3 therefore this risk is screened out.</p> <p>In addition to retail and leisure development, Policy R2 also directs large scale residential development to Basildon town centre. In line with the other strategic housing allocation</p>

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
				<p>policies, consideration is therefore also given to potential likely significant effects in relation to reduced water quality or increased recreation pressure.</p> <p>AWS has indicated that infrastructure and/or treatment upgrades may be required to Basildon WRC and to the foul sewerage network to serve residential growth in Basildon urban area. Reduced water quality effects cannot, therefore, be ruled out in the absence of mitigation.</p> <p>European sites within 10 km of the development site are Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site, Benfleet and Southend Marshes SPA and Ramsar site, and Thames Estuary and Marshes SPA and Ramsar site, the closest of these being Thames Estuary and Marshes approximately 6.6 km to the south. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on all of these European sites, in-combination with other residential development in Basildon Borough and elsewhere.</p> <p>Recommendation: In recognition of the fact that this policy proposes residential development as well as retail/town centre developments, add a requirement to this policy, similar to that in the housing allocation policies H8-H30, that development must be supported by sufficient infrastructure, including any improvements required to the drainage network or water recycling centre. (HRA Screening conclusion is not dependent on adoption of this recommendation)</p>
R3	Laindon town centre regeneration	<p>Reduced water quality - treated wastewater or combined sewer overflows</p> <p>Increased recreation pressure</p>	7, 9	<p>The policy identifies Laindon town centre as a focus for regeneration via a mixed use scheme providing retail, 150-200 residential units and a mix of other town centre uses in accordance with the broad distribution defined by Policy R1.</p> <p>As explained under Policy R1, it is judged that the only potential likely significant effect from retail development in the Borough's town centres is increased downstream flood risk if they are built in flood storage areas (assumed to be Flood Zone 3). Laindon town centre is not within Flood Zone 3 therefore this risk is screened out.</p> <p>In relation to the proposed residential development, consideration is also given to potential likely significant effects in relation to reduced water quality or increased recreation pressure.</p> <p>AWS has indicated that infrastructure and/or treatment upgrades may be required to Basildon WRC and to the foul sewerage network to serve residential growth in Basildon urban area. Reduced water quality effects cannot, therefore, be ruled out in the absence of mitigation.</p> <p>The only European site within 10 km of the development site is Thames Estuary and Marshes SPA and Ramsar site, approximately 7.8 km to the south. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on this European sites, in-combination with other residential development in Basildon Borough and elsewhere.</p> <p>Recommendation: In recognition of the fact that this policy proposes residential development as well as retail/town centre developments, add a requirement to this policy, similar to that in the housing allocation policies H8-H30, that development must be supported by sufficient infrastructure, including any improvements required to the drainage network or water recycling centre. (HRA Screening conclusion is not</p>

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
				dependent on adoption of this recommendation)
R4	Pitsea town centre regeneration	None	4	<p>The policy identifies Pitsea town centre as a focus for regeneration via development of retail and other town centre uses in accordance with the broad distribution defined by Policy R1.</p> <p>As explained under Policy R1, it is judged that the only potential likely significant effect from retail development in the Borough's town centres is increased downstream flood risk if they are built in flood storage areas (assumed to be Flood Zone 3). Pitsea town centre is not within Flood Zone 3 therefore this risk is screened out.</p>
R5	Wickford town centre regeneration	<p>Reduced water quality - treated wastewater or combined sewer overflows</p> <p>Increased recreation pressure</p>	7, 9	<p>The policy identifies Wickford town centre as a focus for regeneration via development of retail and other town centre uses and 15-100 residential units in accordance with the broad distribution defined by Policy R1.</p> <p>As explained under Policy R1, it is judged that the only potential likely significant effect from retail development in the Borough's town centres is increased downstream flood risk if they are built in flood storage areas (assumed to be Flood Zone 3). A very small proportion of Wickford town centre lies within Flood Zone 3 therefore this risk is screened out on the basis that flood storage areas could be avoided through appropriate layout within the town centre.</p> <p>In relation to the proposed residential development, consideration is also given to potential likely significant effects in relation to reduced water quality or increased recreation pressure.</p> <p>AWS has indicated that infrastructure and/or treatment upgrades may be required to Wickford WRC and to the foul sewerage network to serve residential growth in Wickford urban area. Reduced water quality effects cannot, therefore, be ruled out in the absence of mitigation.</p> <p>European sites within 10 km of the development site are Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site and Benfleet and Southend Marshes SPA and Ramsar site, the closest of these being Crouch & Roach Estuaries approximately 4.0 km to the east. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on these European sites, in-combination with other residential development in Basildon Borough and elsewhere.</p> <p>Recommendation: In recognition of the fact that this policy proposes residential development as well as retail/town centre developments, add a requirement to this policy, similar to that in the housing allocation policies H8-H30, that development must be supported by sufficient infrastructure, including any improvements required to the drainage network or water recycling centre. (HRA Screening conclusion is not dependent on adoption of this recommendation)</p>
R6	Billericay town centre enhancement	None	4	<p>The policy identifies Billericay town centre as a focus for regeneration via development of a local foodstore and safeguarding of existing town centre uses in accordance with the broad distribution defined by Policy R1.</p> <p>As explained under Policy R1, it is judged that the only potential likely significant effect from retail development in the Borough's town centres is increased downstream flood risk if they are built in flood storage areas (assumed to be Flood Zone 3). Billericay town centre is not within Flood Zone</p>

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
				3 therefore this risk is screened out.
R7	Town centre boundaries	None	1	Policy defines town centre boundaries within which town centre policies apply. As such it does not provide for development.
R8	Primary shopping frontages	None	1	Policy sets out criteria for change of A1 (shops) use to other Town centre uses and encourages beneficial use of vacant units. As such, it does not provide for development.
R9	Secondary shopping frontages	None	1	Policy allows for a wider range of other town centre uses in Town Centres away from the main shopping area but does not provide for development.
R10	Local centres	None	1	Policy resists loss of A1 (shops) use in Local Centres at ground floor level whilst allowing a wider range of uses, including residential on upper floors. It also allows for the creation of new Local Centres where necessary as part of larger site allocations. As such it does not provide for new development itself.
R11	Out of town retail areas	None	1	Policy identifies existing out of centre shopping areas in the Borough and resists extension of these in favour of town centre locations. As such it does not provide for development.
R12	Festival Leisure Park	None	1	Policy identifies resists extension of a large, existing out of centre shopping area within the Basildon urban area in favour of town centre locations. As such it does not provide for development but instead helps to steer retail development to existing Town Centres.
R13	Hotel development site – Land adjacent to Basildon Golf Course	Increased flood risk – impermeable surfaces	7, 9	<p>Policy provides for the development of a small country house hotel of around 50 rooms adjacent to Basildon golf course.</p> <p>Capacity in Basildon WRC and the local sewerage network to serve this development are uncertain and in the absence of mitigation, reduced water quality effects cannot be ruled out in-combination with the residential development proposed by the Local Plan.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
R14	Locations for town centre uses	None	4	The policy seeks to guide retail use development towards the town centre areas of the Borough through the implementation of a sequential approach. Retail development at out of centre locations is to be prioritised at existing out of centre shopping areas or leisure parks. As such, it encourages development to be sited away from the European sites which surround the Borough.
R15	Existing Local Shops	None	1	The policy addresses the change of use of existing shops or buildings last used as such. It relates to the qualitative criteria for this change of use.
R16	Hot food takeaways	None	1	The policy addresses the criteria by which hot food takeaways might be provided in town centre and local centre locations. The policy in itself would not lead to development which might impact the surrounding European sites.

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R17	Betting office	None	1	The policy sets criteria for the permitting of betting offices in the Borough. In itself, it is not expected to result in the provision of new development in the Borough.
PROMOTING SUSTAINABLE TRANSPORT				
T1	Transport Strategy	None	1, 4	Junction improvements on the A127 within Basildon Borough would be remote from European sites as these are located outside the Borough boundary. The more generic transport improvements supported by the policy would be delivered by other organisations such as Network Rail, Highways England or Essex County Council and would, if required, be subject to project level HRA.
T2	Improvements to carriageway infrastructure	None	4	Listed carriageway improvements within Basildon Borough would be remote from European sites as these are located outside the Borough boundary and would, if required, be subject to project level HRA.
T3	Improvements to footpaths and cycle infrastructure	None	4	Policy commits to working with partners including Essex County Council to deliver improvements to footpath and cycling infrastructure within the Borough. All development within the Borough is remote from the European sites which lie outside of its boundary, avoiding the potential for direct damage or loss.
T4	Improvements to public transport infrastructure and services	None	4	Policy commits to working with partners including Essex County Council and bus service providers to deliver improvements to the public transport network and expects development proposals to support establishment of new public transport services. All development within the Borough is remote from the European sites which lie outside of its boundary, avoiding the potential for direct damage or loss.
T5	Transport improvement areas: safeguarded land	None	1	Policy safeguards land for transport improvements specified in policies TS2, TS3 and TS4 but does not itself provide for development.
T6	Managing congestion	None	1	The policy requires the production of Transport Assessments or Transport Statements to understand the implications of developments that would generate significant levels of traffic. It requires development proposals to incorporate appropriate mitigation measures to address any adverse impacts on the transport network. Where the residual impacts are severe development is not be granted planning permission. As such the policy will not lead to development in itself.
T7	Safe and sustainable access	None	1	The policy seeks to improve local transport safety and access of sustainable modes of transport. It requires the production of Travel Plans, setting out how sustainable travel behaviours will be encouraged where traffic generating development is proposed. Links to sustainable and active modes of transport are to be provided safely and in close proximity to new developments. As such the policy will not lead to development in itself.
T8	Parking standards	None	1, 5	The policy addresses the provision of parking for cars and bicycles in the Borough in the context of the sustainability of the site and the level of accessibility of public transport at the site. The level of parking to be provided is to be guided by further policy (Essex Vehicle Parking Standards) and as such policy TS8 will not in itself result in further development or any potential increase in traffic in the Borough.
T9	Access for	None	1	The policy addresses adequate sizing of and the appropriate location of development which require access by HGVs on a

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
	servicing			regular basis on main or secondary distributor routes as to avoid increases in congestion in the Borough. The policy also addresses the design of all other developments in terms of access by waste collection vehicles and delivery vehicles. The policy is not expected to result in a level of development in itself.
SUPPORTING HIGH QUALITY COMMUNICATIONS INFRASTRUCTURE				
COM 1	Communications infrastructure strategy	None	4	Whilst this policy supports the development of communications infrastructure, this would be within the Borough and thus remote from European sites.
COM 2	Determining applications for telecommunications equipment	None	1	The policy requires that telecommunications equipment is designed and sited to minimise detrimental impacts upon various elements including visual and residential amenity of neighbouring properties as well as seeking opportunities for sharing existing masts.
COM 3	Communications infrastructure in new developments	None	1	The policy provides that new development in the Borough is to provide for new or improved existing communications infrastructure. The policy in itself is not expected to result in new development in the Borough.
DELIVERING A WIDE CHOICE OF HIGH QUALITY HOMES				
H1	Housing strategy	Reduced water quality - treated wastewater or combined sewer overflows Increased recreation pressure	7, 9, 13	Together with Policy SD1, this Policy establishes the total amounts of residential development to be provided in the Borough. Reasons for identifying the indicated types of likely significant effects from residential development within the Borough are discussed in Chapter 3 .
H2	Specialist accommodations strategy	None	1	Policy ensures that an appropriate proportion of the residential development specified by policy H1 will be for older people but does not itself provide for additional development.
H3	Gypsy, traveller and travelling showpeople accommodation strategy	Reduced water quality - treated wastewater or combined sewer overflows Increased recreation pressure	7, 9, 13	Policy sets out the number of additional pitches to be provided for Gypsies, Travellers and Travelling Showpeople. Reasons for identifying the indicated types of likely significant effects from residential development within the Borough are discussed in Chapter 3 .
H4	Established residential areas	Reduced water quality - treated wastewater or combined sewer overflows Increased recreation	7, 9	Policy provides general support for housing development within established residential areas. Whilst this will avoid direct habitat loss or damage to European sites since these are located outside of the Borough boundary, certain likely significant effects from residential development could occur over a greater distance, as discussed in Chapter 3 .

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
		pressure		
H5	Established/safeguarded gypsy, traveller and travelling showpeople sites	None	1	Policy resist change of use of existing gypsy, traveller and travelling showpeople sites and will not, in itself, lead to development.
H6	New gypsy and traveller sites	Reduced water quality - treated wastewater or combined sewer overflows Increased recreation pressure	7, 9	Policy establishes the broad distribution of some of the development specified by Policy H3. Although this will avoid direct habitat loss or damage to European sites since these are located outside of the Borough boundary, some locations may be served by WRCs with less capacity than others, increasing the risk of deterioration in downstream water quality if development is directed to that settlement. Similarly, some locations are closer to European sites than others and directing development to these may therefore increase the risk of recreation pressure. Water resources in the Borough are supplied via an interlinked network therefore the choice of particular development locations in not relevant to potential reduction in water resources.
H7	Mixed use development site - Land west of Gardiners Lane South, Basildon	Reduced water quality - treated wastewater or combined sewer overflows Increased recreation pressure Increased flood risk – impermeable surfaces	7, 9	<p>The policy identifies a site for residential, gypsy and traveller, and employment development on the northern edge of Basildon town, in accordance with the broad distribution defined by Policy SD2.</p> <p>AWS has indicated that capacity is available in Basildon WRC and the local sewerage network to serve the proposed level of residential growth at this site. However, this is on an individual site basis and the cumulative impact of all of the proposed sites may require enhancement to capacity, therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>European sites within 10 km of the development site are Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site, Benfleet and Southend Marshes SPA and Ramsar site, and Thames Estuary and Marshes SPA and Ramsar site, the closest of these being Crouch and Roach Estuaries approximately 7.7 km to the north east. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on all of these European sites, in-combination with other residential development in Basildon Borough and elsewhere.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
H8	Housing development site - Land North of Dry Street, Basildon	Reduced water quality - treated wastewater or combined sewer overflows	7, 9	<p>The policy identifies a site for residential development on the southern edge of Basildon town, in accordance with the broad distribution defined by Policy SD2.</p> <p>AWS has indicated that capacity is available in Basildon WRC but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, this is on an individual site basis and the</p>

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
		<p>Increased recreation pressure</p> <p>Increased flood risk – impermeable surfaces</p>		<p>cumulative impact of all of the proposed sites may require enhancement to capacity, therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>European sites within 10 km of the development site are Benfleet and Southend Marshes SPA and Ramsar site and Thames Estuary and Marshes SPA and Ramsar site, the latter being the closest of these approximately 5.3 km to the south. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on all of these European sites, in-combination with other residential development in Basildon Borough and elsewhere.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
H9	Housing development site - Land North and South of London Road, Vange	<p>Reduced water quality - treated wastewater or combined sewer overflows</p> <p>Increased recreation pressure</p> <p>Increased flood risk – impermeable surfaces</p>	7, 9	<p>The policy identifies a site for residential development on the southern edge of Basildon town, in accordance with the broad distribution defined by Policy SD2.</p> <p>Capacities in the local WRC and the local sewerage network to serve the proposed level of residential growth at this site are uncertain therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>European sites within 10 km of the development site are Benfleet and Southend Marshes SPA and Ramsar site and Thames Estuary and Marshes SPA and Ramsar site, the latter being the closest of these approximately 5.3 km to the south. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on all of these European sites, in-combination with other residential development in Basildon Borough and elsewhere.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
H10	Mixed use development site - West Basildon Urban Extension	<p>Reduced water quality - treated wastewater or combined sewer overflows</p> <p>Increased recreation pressure</p> <p>Increased flood risk – impermeable</p>	7, 9	<p>The policy identifies a site for residential, gypsy and traveller and employment development on the western edge of Basildon town, in accordance with the broad distribution defined by Policy SD2.</p> <p>Based on development of 2,184 dwellings (considerably more than the 1,000 proposed by the policy) AWS has indicated that capacity is available in Basildon WRC but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, this is on an individual site basis and the cumulative impact of all of the proposed sites may require enhancement to capacity, therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p>

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
		surfaces		<p>The only European site within 10 km of the development site is Thames Estuary and Marshes SPA and Ramsar site, located approximately 8.0 km to the south east. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on this European sites, in-combination with other residential development in Basildon Borough and elsewhere.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
H11	Housing development site - Land west of Steeple View	<p>Reduced water quality - treated wastewater or combined sewer overflows</p> <p>Increased recreation pressure</p> <p>Increased flood risk – impermeable surfaces</p>	7, 9	<p>The policy identifies a site for residential development on the north west edge of Basildon town, in accordance with the broad distribution defined by Policy SD2.</p> <p>Capacities in the local WRC and the local sewerage network to serve the proposed level of residential growth at this site are uncertain therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>The only European site within 10 km of the development site is Thames Estuary and Marshes SPA and Ramsar site, located approximately 9.0 km to the south east. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on this European sites, in-combination with other residential development in Basildon Borough and elsewhere.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
H12	Housing development site - Land east of Noak Bridge	<p>Reduced water quality - treated wastewater or combined sewer overflows</p> <p>Increased recreation pressure</p> <p>Increased flood risk – impermeable surfaces</p>	7, 9	<p>The policy identifies a site for residential development on the northern edge of Basildon town, in accordance with the broad distribution defined by Policy SD2.</p> <p>AWS has indicated that capacity is available in Basildon WRC but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, this is on an individual site basis and the cumulative impact of all of the proposed sites may require enhancement to capacity, therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>European sites within 10 km of the development site are Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site, Benfleet and Southend Marshes SPA and Ramsar site, and Thames Estuary and Marshes SPA and Ramsar site, the closest of these being Thames Estuary and Marshes approximately 9.0 km to the south. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on all of these European sites, in-combination with other residential development in Basildon Borough and elsewhere.</p>

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
				The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.
H13	Housing development site - East of Basildon	<p>Reduced water quality - treated wastewater or combined sewer overflows</p> <p>Increased recreation pressure</p> <p>Increased flood risk – impermeable surfaces</p>	7, 9	<p>The policy identifies a site for residential and gypsy and traveller development on the eastern edge of Basildon town, in accordance with the broad distribution defined by Policy SD2.</p> <p>AWS has indicated that capacity is available in Wickford WRC but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, this is on an individual site basis and the cumulative impact of all of the proposed sites may require enhancement to capacity, therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>European sites within 10 km of the development site are Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site, Benfleet and Southend Marshes SPA and Ramsar site, and Thames Estuary and Marshes SPA and Ramsar site, the closest of these being Benfleet and Southend Marshes approximately 4.0 km to the south east. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on all of these European sites, in-combination with other residential development in Basildon Borough and elsewhere.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
H14	Housing development site - Land south of Cranfield Park Road, Wickford	<p>Reduced water quality - treated wastewater or combined sewer overflows</p> <p>Increased recreation pressure</p> <p>Increased flood risk – impermeable surfaces</p>	7, 9	<p>The policy identifies a site for residential and gypsy and traveller development on the south eastern edge of Wickford, in accordance with the broad distribution defined by Policy SD2.</p> <p>AWS has indicated that capacity is available in Wickford WRC but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, this is on an individual site basis and the cumulative impact of all of the proposed sites may require enhancement to capacity, therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>European sites within 10 km of the development site are Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site and Benfleet and Southend Marshes SPA and Ramsar site, the former being the closest of these approximately 3.6 km to the north east. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on all of these European sites, in-combination with other residential development in Basildon Borough and elsewhere.</p>

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
				<p>Only a very small part of the site is within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites.</p> <p>Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
H15	Housing development site - Land north of Southend Road, Shotgate	<p>Reduced water quality - treated wastewater or combined sewer overflows</p> <p>Increased recreation pressure</p> <p>Increased flood risk – impermeable surfaces</p>	7, 9	<p>The policy identifies a site for residential development on the north eastern edge of Wickford, in accordance with the broad distribution defined by Policy SD2.</p> <p>AWS has indicated that capacity is available in Wickford WRC but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, this is on an individual site basis and the cumulative impact of all of the proposed sites may require enhancement to capacity, therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>European sites within 10 km of the development site are Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site and Benfleet and Southend Marshes SPA and Ramsar site, the former being the closest approximately 2.4 km to the north east. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on all of these European sites, in-combination with other residential development in Basildon Borough and elsewhere.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
H16	Housing development site - Land East and South of Barn Hall, Wickford	<p>Reduced water quality - treated wastewater or combined sewer overflows</p> <p>Increased recreation pressure</p> <p>Increased flood risk – impermeable surfaces</p>	7, 9	<p>The policy identifies a site for residential and gypsy and traveller development on the north eastern edge of Wickford, in accordance with the broad distribution defined by Policy SD2.</p> <p>AWS has indicated that capacity is available in Wickford WRC but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, this is on an individual site basis and the cumulative impact of all of the proposed sites may require enhancement to capacity, therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>European sites within 10 km of the development site are Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site and Benfleet and Southend Marshes SPA and Ramsar site, the former being the closest of these approximately 4.3 km to the east. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on these European sites, in-combination with other residential development in Basildon Borough and elsewhere.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that</p>

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
				development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.
H17	Housing development site - Land north of London Road, Wickford	<p>Reduced water quality - treated wastewater or combined sewer overflows</p> <p>Increased recreation pressure</p> <p>Increased flood risk – impermeable surfaces</p>	7, 9	<p>The policy identifies a site for development on the western edge of Wickford, in accordance with the broad distribution defined by Policy SD2.</p> <p>AWS has indicated that capacity is available in Wickford WRC but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, this is on an individual site basis and the cumulative impact of all of the proposed sites may require enhancement to capacity, therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>European sites within 10 km of the development site are Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site and Benfleet and Southend Marshes SPA and Ramsar site, the former being the closest of these approximately 5.4 km to the east. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on these European sites, in-combination with other residential development in Basildon Borough and elsewhere.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
H18	Housing development site - Land south of London Road, Wickford	<p>Reduced water quality - treated wastewater or combined sewer overflows</p> <p>Increased recreation pressure</p> <p>Increased flood risk – impermeable surfaces</p>	7, 9	<p>The policy identifies a site for residential development on the western edge of Wickford, in accordance with the broad distribution defined by Policy SD2.</p> <p>AWS has indicated that capacity is available in Wickford WRC but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, this is on an individual site basis and the cumulative impact of all of the proposed sites may require enhancement to capacity, therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>European sites within 10 km of the development site are Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site and Benfleet and Southend Marshes SPA and Ramsar site, the former being the closest of these approximately 5.5 km to the north east. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on these European sites, in-combination with other residential development in Basildon Borough and elsewhere.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby</p>

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
				increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.
H19	Housing development site - Land north of Potash Road, Billericay	<p>Reduced water quality - treated wastewater or combined sewer overflows</p> <p>Increased recreation pressure</p> <p>Increased flood risk – impermeable surfaces</p>	7, 9	<p>The policy identifies a site for residential development on the northern edge of Billericay, in accordance with the broad distribution defined by Policy SD2.</p> <p>AWS has indicated that capacity is available in Billericay WRC but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, this is on an individual site basis and the cumulative impact of all of the proposed sites may require enhancement to capacity, therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site is approximately 9.5 km to the east of the development site, all other European sites being more than 10 km away. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on this European site, in-combination with other residential development in Basildon Borough and elsewhere.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
H20	Housing development site - Land west of Tye Common Lane, Billericay	<p>Reduced water quality - treated wastewater or combined sewer overflows</p> <p>Increased flood risk – impermeable surfaces</p>	7, 9	<p>The policy identifies a site for residential development on the south west edge of Billericay, in accordance with the broad distribution defined by Policy SD2.</p> <p>AWS has indicated that capacity is available in Billericay WRC but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, this is on an individual site basis and the cumulative impact of all of the proposed sites may require enhancement to capacity, therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>All European sites are more than 10 km from this development site and it is therefore assumed that any contribution it could make to increased recreation pressure would be negligible.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
H21	Housing development site - Land south of	<p>Reduced water quality - treated wastewater or</p>	7, 9	<p>The policy identifies a site for residential development on the western edge of Billericay, in accordance with the broad distribution defined by Policy SD2.</p> <p>AWS has indicated that capacity is available in Billericay WRC</p>

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
	London Road, Billericay	combined sewer overflows Increased flood risk – impermeable surfaces		<p>but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, this is on an individual site basis and the cumulative impact of all of the proposed sites may require enhancement to capacity, therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>All European sites are more than 10 km from this development site and it is therefore assumed that any contribution it could make to increased recreation pressure would be negligible.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
H22	Housing development site - Land west of Mountnessing Road, Billericay	Reduced water quality - treated wastewater or combined sewer overflows Increased flood risk – impermeable surfaces	7, 9	<p>The policy identifies a site for residential development on the western edge of Billericay, in accordance with the broad distribution defined by Policy SD2.</p> <p>Based on 144 potential new homes at this site, AWS has indicated that capacity is available in Billericay WRC but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, Policy H23 provides for 280 new homes and AWS's advice is on an individual site rather than cumulative basis, therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>All European sites are more than 10 km from this development site and it is therefore assumed that any contribution it could make to increased recreation pressure would be negligible.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
H23	Housing development site - Land east of Frithwood Lane, Billericay	Reduced water quality - treated wastewater or combined sewer overflows Increased flood risk – impermeable surfaces	7, 9	<p>The policy identifies a site for residential development on the south west edge of Billericay, in accordance with the broad distribution defined by Policy SD2.</p> <p>AWS has indicated that capacity is available in Billericay WRC but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, this is on an individual site basis and the cumulative impact of all of the proposed sites may require enhancement to capacity, therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>All European sites are more than 10 km from this development site and it is therefore assumed that any contribution it could make to increased recreation pressure would be negligible.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater</p>

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				chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.
H24	Housing development site - Land South of Windmill Heights, Great Burstead and South Green, Billericay	Reduced water quality - treated wastewater or combined sewer overflows Increased flood risk – impermeable surfaces	7, 9	<p>The policy identifies a site for residential development on the southern edge of Billericay, in accordance with the broad distribution defined by Policy SD2.</p> <p>AWS has indicated that capacity is available in Billericay WRC but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, this is on the basis of fewer homes than the 70 provided for by Policy H25 and on an individual site rather than cumulative basis, therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>All European sites are more than 10 km from this development site and it is therefore assumed that any contribution it could make to increased recreation pressure would be negligible.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
H25	Housing development site - Land west of Kennel Lane, Great Burstead and South Green	Reduced water quality - treated wastewater or combined sewer overflows Increased flood risk – impermeable surfaces	7, 9	<p>The policy identifies a site for residential development on the southern edge of Billericay, in accordance with the broad distribution defined by Policy SD2.</p> <p>AWS has indicated that capacity is available in Billericay WRC but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, this is on the basis of fewer homes than the 70 provided for by Policy H25 and on an individual site rather than cumulative basis, therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>All European sites are more than 10 km from this development site and it is therefore assumed that any contribution it could make to increased recreation pressure would be negligible.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.</p>
H26	Housing development site - Land East of Greens	Reduced water quality - treated wastewater or	7, 9	<p>The policy identifies a site for residential development on the south eastern edge of Billericay, in accordance with the broad distribution defined by Policy SD2.</p> <p>Capacities in the local WRC and the local sewerage network to</p>

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
	Farm Lane, Billericay	combined sewer overflows Increased recreation pressure Increased flood risk – impermeable surfaces		serve the proposed level of residential growth at this site are uncertain therefore reduced water quality effects cannot be ruled out in the absence of mitigation. Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site is approximately 9.9 km to the east of the development site, all other European sites being more than 10 km away. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on this European site, in-combination with other residential development in Basildon Borough and elsewhere. The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.
H27	Housing development site - Land east of Southend Road, Great Burstead and South Green	Reduced water quality - treated wastewater or combined sewer overflows Increased recreation pressure Increased flood risk – impermeable surfaces	7, 9	The policy identifies a site for residential development on the south eastern edge of Billericay, in accordance with the broad distribution defined by Policy SD2. AWS has indicated that capacity is available in Billericay WRC but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, this is on the basis of fewer homes than the 220 provided for by Policy H28 and on an individual site rather than cumulative basis, therefore reduced water quality effects cannot be ruled out in the absence of mitigation. Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site is approximately 9.9 km to the east of the development site, all other European sites being more than 10 km away. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on this European site, in-combination with other residential development in Basildon Borough and elsewhere. The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in-combination with other greenfield development proposed by the Local Plan.
H28	Housing growth in Ramsden Bellhouse	Reduced water quality - treated wastewater or combined sewer overflows Increased recreation pressure Increased flood risk –	7, 9	The policy identifies sites for residential development within the extended envelope of Ramsden Bellhouse village to the west of Wickford, in accordance with the broad distribution defined by Policy SD2. AWS has indicated that capacity is available in Wickford WRC but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, this is on an individual site basis and the cumulative impact of all of the proposed sites may require enhancement to capacity, therefore reduced water quality effects cannot be ruled out in the absence of mitigation. Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
		impermeable surfaces		<p>Ramsar site is approximately 6.6 km to the east of the development site, all other European sites being more than 10 km away. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on this European site, in combination with other residential development in Basildon Borough and elsewhere.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in combination with other greenfield development proposed by the Local Plan.</p>
H29	Housing growth in Crays Hill	<p>Reduced water quality - treated wastewater or combined sewer overflows</p> <p>Increased recreation pressure</p> <p>Increased flood risk – impermeable surfaces</p>	7, 9	<p>The policy identifies a site for residential development within the extended envelope of Crays Hill village to the west of Wickford, in accordance with the broad distribution defined by Policy SD2.</p> <p>AWS has indicated that capacity is available in Wickford WRC but that upgrades may be required to the local sewerage network to serve the proposed level of residential growth at this site. However, this is on an individual site basis and the cumulative impact of all of the proposed sites may require enhancement to capacity, therefore reduced water quality effects cannot be ruled out in the absence of mitigation.</p> <p>European sites within 10 km of the development site are Crouch & Roach Estuaries (Mid-Essex Coast Phase 3) SPA and Ramsar site, and Benfleet and Southend Marshes SPA and Ramsar site, the closest of these being Benfleet and Southend Marshes approximately 7.1 km to the north east. In the absence of mitigation it is assumed that residential development at this site could contribute to increased recreation pressure on all of these European sites, in combination with other residential development in Basildon Borough and elsewhere.</p> <p>The site is not within Flood Zone 3 (1 in a 100 or greater chance of river flooding each year) therefore it is judged that development here would not be likely to increase flood risk at downstream European sites. Development on this greenfield location could create impermeable surfaces and thereby increase surface drainage rates. This has the potential to increase flood risk at downstream European sites, in combination with other greenfield development proposed by the Local Plan.</p>
H31	The location of residential development	None	4	<p>The policy supports the provision of residential development in the existing urban areas of the Borough, dependent on the meeting of a number of criteria. The policy guides development towards areas where it is generally not to give rise to significant effects on the European sites beyond the Borough boundary and individual proposals would be subject to project level HRA, if appropriate.</p>
H32	The location of new gypsy, traveller and travelling showpeople sites	None	1, 4	<p>The policy details criteria that sites for gypsies, travellers and travelling show people must meet if they are to gain planning permission. These are limited mainly to design issues however there is also reference in the policy to requiring the site not be affected by a high risk of flooding which would help to avoid the likelihood of increasing downstream flood</p>

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
				risk to European sites.
H33	New park homes sites	None	1, 4	The policy details criteria that park home sites for non-travelling gypsies, travellers and travelling show people must meet if they are to gain planning permission. These are limited mainly to design issues however there is also reference in the policy to requiring the site not be affected by a high risk of flooding which would help to avoid the likelihood of increasing downstream flood risk to European sites.
H34	The size and types of homes	None	1	The policy will not lead to development but relates to the housing mix provided as to meet the needs of existing and future households in the Borough.
H35	Affordable housing provision	None	1	The policy will not lead to development but relates to the affordability of development provided for elsewhere within the Local Plan.
H36	Quality in the private rented sector	None	1	The policy will not lead to development but encourages landlords to become part of a landlord accreditation scheme.
H37	Houses in multiple occupation and the subdivision of family homes	None	1	The policy addresses the conversion of large family sized dwelling houses into Houses in Multiple Occupation (HMOs) or flats in the Borough. It will not lead to development in itself.
H38	Maximising housing stock	None	1	The policy seeks to protect the redevelopment of residential properties for other uses in most circumstances. As such it is not expected to lead to development in itself.
REQUIRING GOOD DESIGN				
DES1	Achieving good design	None	1, 3	The policy will not lead to development but relates to the design of development provided for elsewhere within the Local Plan.
DES2	Urban character areas	None	1, 3	The policy is not expected to lead to development but seeks to promote development which responds to local character and distinctiveness as per the Urban Character Areas of the Borough.
DES3	Areas of special development control	None	1, 3	Policy sets criteria for the layout and design of new dwellings in specified areas where this is required to preserve the amenity of existing development. As such, it will not result in new development.
DES4	High quality buildings	None	1, 3	The policy requires that new development in the Borough is of a high quality. New development is to be appropriate in terms of siting, scale, form, proportions, materials, details and the overall design. The policy is not likely to result in new development in itself.
DES5	High quality public realm	None	1, 3	The policy the requirement for new development to demonstrate how it will contribute to the public realm of the Borough in terms of both visual amenity and safety. The policy is not expected to lead to new development in itself.
DES6	High quality landscaping	None	1, 2	The policy requires that development allows for high quality soft landscaping, hard landscaping and boundary treatments as appropriate. It also promotes the use of native species within new developments as a biodiversity priority. The policy is not expected to lead to new development in itself.
DES7	Advertising	None	1, 3	The policy addresses advertising structures in the Borough

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				requiring that these features do not impact upon public safety and amenity. The policy is not expected to lead to new development in itself.
DES8	Appearance of business premises	None	1, 3	The policy requires that business premises make use of high quality materials and design as to make a positive contribution to the streetscape. The policy also addresses safety and access to this type of premises. The policy is not expected to lead to new development in itself.
DES9	Public art and interpretation	None	1, 3	The policy seeks to protect existing public art in the Borough and the provision of new art work at developments which meet certain criteria. The policy is not expected to lead to new development in itself.
PROMOTING HEALTHY COMMUNITIES				
HC1	Strategic approach to leisure and recreation	None	4	<p>Policy sets strategy of support for provision of new and enhanced open space, sports and recreational facilities. Built facilities supported by this strategy will avoid direct habitat loss or damage to European sites since these are located outside of the Borough boundary and more remote effects are judged unlikely given the distance of these sites from the Borough boundary and the type of development.</p> <p>Open space provision supported by this strategy should help to mitigate the potential increase in recreation pressure on European sites from housing development proposed elsewhere in the Local Plan. It is uncertain how effective this will be at diverting residents who might otherwise visit European sites as this will depend on a variety of factors including the accessibility and design of new/enhanced open space relative to the European sites.</p>
HC2	Strategic approach to education, skills and learning	None	4	Policy sets strategy of support for provision of new or enhanced education facilities. Built facilities supported by this strategy will avoid direct habitat loss or damage to European sites since these are located outside of the Borough boundary and more remote effects are judged unlikely given the distance of these sites from the Borough boundary and the type of development.
HC3	Strategic approach to health and social care	None	4	Policy sets strategy of support for provision of new or enhanced health and social care facilities. Built facilities supported by this strategy will avoid direct habitat loss or damage to European sites since these are located outside of the Borough boundary and more remote effects are judged unlikely given the distance of these sites from the Borough boundary and the type of development.
HC4	Community facilities	None	1, 4	Policy is mainly concerned with safeguarding existing community facilities and will not lead to development. Enhancements to these facilities are also supported; such development will avoid direct habitat loss or damage to European sites since these are located outside of the Borough boundary and more remote effects are judged unlikely given the distance of these sites from the Borough boundary and the type of development.
HC5	Public open spaces	None	1, 4	Policy is mainly concerned with safeguarding existing public open spaces and will not lead to development. Enhancements to these open are also supported; such development will avoid direct habitat loss or damage to European sites since these are located outside of the Borough boundary and more remote effects are judged unlikely given the distance of these sites from the Borough boundary and

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				the type of development.
HC6	Allotment gardens	None	1	Policy is concerned with safeguarding existing allotments and will not lead to development.
HC7	Playing fields associated with education facilities	None	1	Policy is concerned with safeguarding existing playing fields and will not lead to development.
HC8	Private open spaces	None	1, 4	Policy is mainly concerned with safeguarding existing private open spaces and will not lead to development. Development of essential facilities is also supported; such development will avoid direct habitat loss or damage to European sites since these are located outside of the Borough boundary and more remote effects are judged unlikely given the distance of these sites from the Borough boundary and the type of development.
HC9	New and enhanced community facilities	None	1, 4	The policy supports the provision of new community facilities in the Borough where they are appropriate. These facilities are to be related to defined settlements and therefore it is expected that the policy would guide development to the more developed areas of the Borough minimising potential for detrimental impacts upon the European sites beyond the Borough boundary. Individual developments would also be subject to project level HRA down the line, if appropriate. Provision of new leisure facilities may also help to reduce recreational pressure from housing development on European sites.
HC10	Loss of community facilities	None	1	The policy seeks to protect community facilities in the Borough allowing for the change of use of these facilities where they have been identified as being unviable. The policy is not expected to lead to new development in itself.
HC11	Loss of open space	None	1	The policy seeks to protect open space in the Borough only allowing for development which would result in a loss of this provision where there is to be no detrimental impact on local ecology or where the proposal would result in qualitative or quantitative improvement to recreational facilities which may help to reduce potential recreational pressures on surrounding European sites.
PROTECTING GREEN BELT LAND				
GB1 & GB2	Strategic approach to Green Belt protection, and Green Belt extent	None	1	These two policies apply NPPF Green Belt policy to Basildon Borough, defining the extent of the Green Belt in the Borough and describing how the NPPF purposes of Green Belt apply locally. As such, they are not expected to lead to development although they will contribute to directing development proposed by other policies away from the Green Belt and towards the town centres of Basildon, Laindon, Pitsea and Pickford where regeneration is supported.
GB3	Plotland infills	None	4	This policy permits limited residential infill in the Borough's 13 Plotland settlements. Such development will avoid direct habitat loss or damage to European sites since these are located outside of the Borough boundary and more remote effects are judged unlikely given the distance of these sites from the Borough boundary and the small scale of development that will be permitted.
GB4	New development in the Green Belt	None	1, 4	The policy seeks to protect the Green Belt from new development and will not lead to development in itself. By preventing new in the Green Belt around the Borough's settlements (except in very special circumstances that clearly outweigh the harm to the Green Belt) it also helps to steer

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
				development away from locations closer to European sites, encouraging development within existing urban areas.
GB5	Extensions and alterations to buildings in the Green Belt	None	4	The policy allows for extensions of existing properties within the Green Belt provided they are not disproportionate in terms of the size of the original building. As such the policy would steer development away from European sites as these are situated beyond the Borough boundary. The small scale of development involved is not considered likely to be capable of significant indirect effects on European sites.
GB6	Replacement buildings in the Green Belt	None	4	The policy supports the provision of replacement buildings of the same use for those within the Green Belt. Replacement development is not be materially bigger and should not result in an intensification of use. As such the policy would steer development away from European sites as these are situated beyond the Borough boundary. The small scale of development involved is not considered likely to be capable of significant indirect effects on European sites.
GB7	Change of use of buildings and land in the Green Belt	None	1	The policy supports the change of use of buildings within the Green Belt dependent upon the satisfaction of a number of criteria to include requiring that an intensification of use will not occur and unacceptable generation of traffic or pollution is unlikely. As such the policy will not result in development.
GB8	Ancillary buildings and structures in the Green Belt	None	4	The policy addresses the provision of ancillary buildings in the Green Belt. The development of ancillary buildings and previous extensions is to be limited to an increase of no more than 35% more than the original size of the building. As such the policy would steer development away from European sites as these are situated beyond the Borough boundary. The small scale of development involved is not considered likely to be capable of significant indirect effects on European sites.
GB9	Boundary treatments in the Green Belt	None	1	The policy protects the Green Belt from encroachment in terms of boundary amendments with support to be given to these types of proposals only where the openness of the Green Belt can be maintained. The policy specifically relates to enclosure or boundary treatment at Green Belt locations and as such should not result in development in itself.
GB10	Agricultural worker dwellings in the Green Belt	None	4	The policy prevents the granting of permissions for new dwellings in the Green Belt in most circumstances but this type of development is to be permitted if a functional need can be established. As such the policy would steer development away from European sites as these are situated beyond the Borough boundary. The small scale of development involved is not considered likely to be capable of significant indirect effects on European sites.
GB11	Positive uses of land in the Green Belt	None	4	The policy supports proposals in the Green Belt which will meet a number of criteria including not resulting in unacceptable generation of traffic, noise, or other forms of disturbances and improving nature conservation and opportunities for sports and recreation. As such this policy is not expected to result in development which would increase pressures on surrounding European sites and the provision of opportunities for sports and recreation may help reduce potential for recreational pressures in these areas.
MEETING THE CHALLENGE OF CLIMATE CHANGE AND FLOODING				
CC1	Responding to climate change	None	5	The policy seeks to reduce carbon emissions from the Borough and minimise climate change-related flood risk. This will be achieved by a variety of measures, these being set out in more detail in other Local Plan policies. The exception to

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				this is the policy's requirement for large development proposals to incorporate renewable energy generation, preferably on-site. This requirement is not considered capable of likely significant effects on any European site.
CC2	Flood risk and drainage management	None	5	The policy sets out the strategic approach to reducing the risk of flooding in the Borough through measures which are covered in more detail by Policies CC3 and CC4. These are separately assessed below.
CC3	Washlands	None	1	This policy safeguards areas of flood and storm water storage within or on the edge of the Borough's settlements and will not lead to development.
CC4	Managing flood risk in new development	None	1	The policy seeks to reduce risk of flooding in the Borough through measures such as providing development at areas of reduced flood risk by making use of a sequential approach and the incorporation of SuDS as part of all development proposals. As such it will not lead to new development and should help to reduce the risk that development provided by other Local Plan policies might increase flood risk at downstream European sites.
CC5	Sustainable buildings - new builds	None	1	The policy seeks to require new buildings to be as sustainable as possible through appropriate design and location. This is to include energy and water efficiency as well as waste management. The policy in itself would not result in a new development.
CC6	Sustainable buildings - extensions, alterations and conversions	None	1	The policy seeks to require extensions in the Borough to be as sustainable as possible through appropriate design and location. This is to include risk in terms of extreme weather events, energy and water efficiency as well as waste management. The policy in itself would not result in a new development.
CC7	Renewable energy infrastructure	None	5, 6	The policy supported the provision of renewable energy and low carbon schemes. Similarly wind turbines and solar farms are to be supported. Wind turbine development can pose a collision risk to designated bird populations of European sites outside of the immediate development area. It is judged that the effect would only be likely to be significant if a major wind farm were placed on a major migration route or within an important feeding, breeding or roosting area. Policy CC7 offers only generic support for renewables development but the likely scale and location of development will depend on the particular proposals that come forward. Individual wind energy development proposals would be subject to project level HRA if required and it is judged that this is a more appropriate stage at which to assess the potential for likely significant effects on designated bird populations of European sites. Recommendation: Add a clause to this policy stating that proposals for wind energy generation should include an assessment of whether the development site lies on a major migration route or within an important feeding, breeding or roosting area for any designated bird population of a European site. (HRA Screening conclusion is not dependent on adoption of this recommendation)
CONSERVING AND ENHANCING THE NATURAL ENVIRONMENT				

Ref	Policy name	Potential likely significant effects prior to mitigation	Reasons for potential likely significant effects - Table 4.1 categories	Reasons for potential likely significant effects - discussion
NE1	Green infrastructure strategy	None	1, 2	The policy supports protection, extension and enhancement of the Borough's green infrastructure network, creation of new habitats and partnership working to deliver the aims of the South Essex Green Grid Strategy and Greater Thames Marshes Nature Improvement Area. As such it is not expected to lead to development and should lead to improvements to the natural environment, including biodiversity.
NE2	Landscape character areas	None	1, 2	This policy identifies East Billericay; Doeshill Farmlands; and Langdon Hills, Marshlands and Pitseahall Island as three particularly important landscapes which will be protected and enhanced. As such it is not expected to lead to development and should lead to improvements to the natural environment, including biodiversity.
NE3	Country parks	None	1, 2	This policy safeguards existing Country Parks in the Borough and as such, will not lead to development.
NE4	Local wildlife sites	None	1, 2	This policy seeks the conservation and enhancement of Local Wildlife Sites in the Borough. As such it is not expected to lead to development and should lead to improvements to the natural environment, including biodiversity.
NE5	Development impacts on ecology and biodiversity	None	1, 2	The policy supports developments which will result in net gain in biodiversity in the Borough while requiring that development which is likely to have adverse effects on a number of different designated biodiversity sites is not normally permitted. Where harm on other biodiversity sites is likely appropriate mitigation should be incorporated. The policy in itself would not result in a new development.
NE6	Development impacts on landscape and landscape features	None	1, 2	The policy seeks to protect natural and semi-natural features and the character of the landscape from inappropriate development. Although the purpose of the policy is to enhance the quality and visual amenity of the landscape and urban environment in the Borough, protection of natural and semi-natural features may also have positive effects on biodiversity in the area. The policy in itself would not result in a new development.
NE7	Pollution control and residential amenity	None	1, 2	The policy seeks to protect the environment in the Borough from pollution to land, air or water. This is to be achieved through the appropriate siting of development and through design considerations (e.g. the successful incorporation of the SuDS). The policy will not result in development in itself.
NE8	Development on contaminated land	None	1, 3	The policy addresses development in terms of contaminated land and its remediation. The policy in itself would not result in a new development.
NE9	Ensuring health and safety in development (hazardous uses, sewerage treatment, pylons)	None	1, 2	The policy addresses new hazardous development in the Borough in terms of assessment against Health and Safety Executive Guidance and impacts on water quality when certain development is located within 400m a Water Recycling Centre. As such the policy may help to reduce potential for impacts from pollution in the Borough. The policy would not result in development in itself.
CONSERVING AND ENHANCING THE HISTORIC ENVIRONMENT				
HE1	Strategy for conserving and enhancing	None	1, 3	The policy sets out the strategic approach to conserving and enhancing the historic environment in the Borough through sensitive development proposals. The policy would not result

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	the historic environment			in development in itself.
HE2	Conservation areas	None	1, 3	The policy seeks to preserve and enhance character and appearance of Conservation Areas in the Borough. This is to be achieved through retaining features and buildings important to the character of the area and through design which is sensitive but allows for energy efficiency and renewable energy technologies. The policy would not result in development in itself.
HE3	Listed buildings	None	1, 3	The policy allows for development and change of use of a Listed Building provided there is to be protection for the significance of the building among other consideration. If a proposal is to affect the significance of a Listed Building this is to be weighed against any public benefit with harm or loss of significance to be minimised through appropriate mitigation. The policy would not result in development in itself.
HE4	Scheduled monuments and archaeology	None	1,3	The policy seeks to protect Scheduled Monuments and other important archaeological sites adopting a precautionary approach. The policy would not result in development in itself.
HE5	Locally identified heritage assets	None	1, 3	The policy supports development of locally identified heritage assets dependent upon that development being sensitive and sympathetic of the character of the asset in question. The significance of heritages is to be retained where development might affect them. The policy in itself would not result in development.
IMPLEMENTATION, MONITORING AND REVIEW				
IMP1	Implementation strategy	None	1	This policy describes mechanisms and processes which will help the Local Plan policies to be delivered, for example establishment of an Infrastructure Delivery Plan and setting of Community Infrastructure Levy contributions to essential infrastructure. As such, it will not in itself result in development.
IMP2	Use of Planning Obligations	None	2	The policy requires new development to contribute towards mitigating its impact on the environment amongst other things. This is to include flood prevention, green infrastructure (which may reduce potential recreational pressures on the surrounding European sites) and climate change and energy initiatives (which may reduce potential for impacts as a result of pollution according on the surrounding European sites). The policy will permit developers to provide the necessary infrastructure themselves instead of providing financial contributes to this end.
IMP3	Phasing of development	None	1	The policy sets the phasing of development which is to be acceptable in terms of incorporation of environmental mitigation and infrastructure as well as affordable housing. The policy in itself should not result in development.
IMP4	Piecemeal development	None	1	The policy supports the development of part of an allocated development site where the developer can meet the criteria of the Council. The policy in itself should not result in development.