Anglian Flood Risk Management Plan

Habitats Regulations Assessment

December 2022

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Table of Contents

1. Non-Technical Summary

Introduction

1.1 This is the Habitats Regulations Assessment (HRA) of the Anglian River Basin District (RBD) Flood Risk Management Plan (FRMP). The HRA has been undertaken in accordance with The Conservation of Habitats and Species Regulations (The Habitat Regulations) 2017 (as amended) and considers the potential implications of the FRMP on designated European conservation sites. These sites contain species and habitats that are important at a European scale.

1.2 The FRMP, covering the years between 2021 and 2027, seeks to manage significant flood-related issues in the Anglian RBD, including 28 specifically identified Flood Risk Areas. It covers an area of 27,900km^2. It extends from Lincolnshire in the north to Essex in the south and from Northamptonshire in the west to the east coast of Norfolk, Suffolk, and Essex. The FRMP seeks to reduce a range of flooding threats, including from rivers, the sea, surface water, groundwater and sewers / canals / reservoirs.

1.3 The need for protecting human receptors should be viewed in the context of the environmental challenges present in the Anglian RBD. Many geographic areas in the RBD are experiencing growth and need to mitigate climate change. Therefore, many freshwater and coastal habitats in the RBD, important in sustaining wintering wildfowl, fish populations and terrestrial species (e.g. otters), are subject to a wide range of human impacts, such as recreational pressure, reduced water flow / level, declining water quality and coastal squeeze. This HRA assesses the potential for the Anglian FRMP to result in Likely Significant Effects (LSEs) and, where applicable, adverse effects on the integrity of European sites (i.e. the ability of those sites to achieve their conservation objectives).

Methodology

1.4 The Habitats Regulations 2017 (as amended) set out the specific assessment steps required for the HRA process.

1.5 The first step in the sequence of tests, often referred to as HRA screening, establishes whether a more detailed analysis known as Appropriate Assessment is required. The purpose of HRA screening is to determine, in view of the best available scientific knowledge, whether a plan or project, either alone or in-combination with other plans or projects, could result in LSEs on European sites in view of their Conservation Objectives. If the Competent Authority determines that no LSEs are present (both alone and in-combination), then no further assessment is necessary.

Test of Likely Significant Effects

1.6 All measures included in the Anglian RBD were assessed for LSEs on the European sites across and within 10km of the RBD. None of the measures were identified to result in LSEs on any European site for a range of reasons, including that they are too non-specific to assess meaningfully, already being implemented (thus having undergone HRA previously), being subjected to a separate consenting process (as applies to Local Flood Risk Management Plans, Shoreline Management Plans (SMPs) and Coastal Strategies), desk-based and involving no physical activity on the ground, remote from vulnerable sites, or worded such they are about 'investigating', 'reviewing' and 'identifying opportunities'.

1.7 One group of measures was found to commit to physical work on the ground by 'delivering' or 'implementing' flood management interventions, such as coastal defence structures or natural flood management approaches. The broad location of some measures is known, enabling a broad assessment of their proximity to European sites and potential linking impact pathways. However, further HRA (including Appropriate Assessment) was deferred to the planning application stage when details on the nature of proposals are available. This approach was adopted to account for the strategic (and thereby necessarily non-specific) nature of the FRMP, while also identifying the measures with the highest impact potential on European sites.

1.8 This document also identified that a range of measures in the Anglian FRMP have the potential to improve the hydrological condition of European sites across the RBD, particularly in the Broads SAC and Broadland SPA / Ramsar, where four specific measures are targeted towards habitat restoration and water level management, and the Ouse and Nene Washes which are increasingly subject to prolonged winter flooding. Overall, it was shown that the FRMP represents a positive framework that will help achieve the Conservation Objectives of the SPA / Ramsar sites, such as by fostering collaboration with landowners through the Environment Land Management Scheme, updating and delivering Water Level Management Plans, developing a new flood risk management strategy and delivering initiatives such as the Broadland Futures Initiative Strategy and Cambridgeshire Fens Flood Risk Management Strategy.

Other Plans and Projects

1.9 The potential for the FRMP to result in LSEs on European sites in-combination with (i.e. when considered alongside) other plans and projects was also assessed. Many such plans are proposed across the RBD, which are associated with their own impact potential. For example, local authorities are proposing a minimum of 300,000 new dwellings within the timescales of their current Local Plans and Core Strategies. There is also a potential for cumulative impacts with Water Resource Management Plans and SMPs.

1.10 Potential in-combination LSEs with Local Plan development were excluded due to most measures not being negatively linked to European sites, the fact that some measures are only included for completeness being driven by entirely separate plan processes, and the strategic nature of the FRMP, meaning that those measures with potential interactions with European sites depend upon considerable further development before the presence of any impact pathways can be clearly identified.
Conclusion

1.11 LSEs of the FRMP on all European sites, both alone and in-combination, were excluded for all measures and an Appropriate Assessment was not required. This was based on various factors, including some measures being carried over from the cycle 1 FRMP (which would have been subject to the statutory consenting process, including HRA), already implemented, not associated with impact pathways linking to European sites or too non-specific (either in terms of specific location, their nature or both) to allow for a detailed, meaningful assessment.

1.12 Notably, 50 measures were screened out at the strategic FRMP level but recommended for down-the-line HRA since the measures are sufficiently broadly expressed that they could be delivered without adverse effects but this will need to be reassessed as actual schemes are developed. As the details of potential schemes are developed towards the planning application stage, the HRA process will ensure that adequate mitigation measures, where relevant, are incorporated and the integrity of European sites will be protected.

2. Introduction and Approach to Assessment

Background and Description of the Anglian River Basin District

2.1 The Anglian River Basin District (RBD) covers 27,900km^2. It extends from Lincolnshire in the north to Essex in the south and from Northamptonshire in the west to the east coast of Norfolk, Suffolk, and Essex. In total, over 6.4 million people live and work within the district. It includes the urban centres of:

- Cambridge
- Chelmsford
- Ipswich
- Lincoln
- Milton Keynes
- Northampton
- Norwich

2.2 The Anglian RBD has a rich diversity of wildlife and habitats, supporting many species of global and national importance. It is recognised as a rich region for wetland wildlife, with the Norfolk Broads being Britain's largest nationally protected wetland of international importance for wintering wildfowl and waders. The Lincolnshire, Norfolk, Suffolk, and Essex coasts also contain a wide range of designated sites that are internationally important for wildlife as well as supporting a significant tourism industry.

2.3 The management catchments that make up the RBD include many interconnected rivers, lakes, groundwater and coastal waters. These range from chalk and limestone ridges to the extensive lowlands of the Fens and East Anglian coastal estuaries and marshes. The river basin district is a predominantly rural catchment, with more than 50% of land used for agriculture and horticulture. East Anglia is a popular tourist destination, particularly for water recreation including boaters, kayakers, beach goers, and anglers. The Norfolk Broads and coastal destinations contribute significantly to the local economy.

2.4 Within the Anglian RBD there are:

- 16 Flood Risk Areas (FRAs) for significant risk of flooding from main rivers and the sea
- 12 FRAs for significant risk of flooding from surface water

2.5 The Environment Agency leads development of the Flood Risk Management Plans (FRMP) for River Basin Districts in England and delivery of flood warning services. The draft second cycle FRMP is a plan to manage significant flood risks in

designated flood risk areas (FRAs). The ambition is that the FRMP is a strategic, place-based plan which shows what is happening in flood risk management across the River Basin District. FRMPs focus on the more significant areas of flooding and describe the risk of flooding now and in the future. These plans will help:

- identify actions that will reduce the likelihood and consequences of flooding update plans to improve resilience whilst informing the delivery of existing flood programmes
- work in partnership to explore wider resilience measures, including nature-based solutions for flood and water
- set longer-term, adaptive approaches to help improve the nation's resilience

2.6 This document forms the Habitats Regulations Assessment (HRA) for the Anglian FRMP. This document considers the potential effects of the draft FRMP on Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites, either alone or in combination with other plans or projects, and in view of best scientific knowledge.

Legislative context

2.7 The National Site Network of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) is protected via the Conservation of Habitats and Species Regulations 2017 (as amended, most recently in 2019 to reflect Brexit). These regulations also set out the process for assessing potential adverse effects on such sites, known as HRA. Paragraph 181 of the National Planning Policy Framework[1] clarifies that, in England, the HRA process is also applied to another category of internationally important wildlife site called Ramsar sites.

2.8 The legislative basis for HRA is set in the Conservation of Habitats and Species Regulations 2017 (as amended). This states that 'A competent authority, before deciding to … give any consent for a plan or project which is likely to have a significant effect on a European site … shall make an appropriate assessment of the implications for the site in view of that sites conservation objectives… The authority shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site'.

2.9 The competent authority that carries out the HRA (in this case the Environment Agency) is required to apply the precautionary principle to European sites and can only adopt a plan once it has been ascertained that it will not adversely affect the integrity of the site concerned. However, even if significant adverse effects on the designated site are predicted, and in the absence of a suitable alternative solution, the plan can still be adopted in exceptional circumstances where there are deemed sufficient imperative reasons of over-riding public interest (IROPI). In such cases, however, compensatory measures must be implemented.

Overview of HRA process

2.10 The Habitats Regulations do not prescribe a particular methodology for carrying out an appraisal of plans or projects. However, it does set out the specific assessment steps involved. In February 2021 the government provided broad guidance on the HRA process[2]. The most detailed guidance on the HRA process in the UK has been produced by Scottish Natural Heritage (now NatureScot). They outline a series of thirteen steps. However, with cognisance of recent case law (refer to Table 1) clarifying when mitigation can be taken into account in the HRA process, the process has been revised to constitute eleven stages (see Figure 1).

2.11 A four-stage methodology for HRA would therefore include:

- HRA Stage 1 – screening (including a 'likely significant effect' judgement)
- HRA Stage 2 – appropriate assessment
- HRA Stage 3 – assessment of alternative solutions
- HRA Stage 4 – assessment where no alternative solutions exist and where adverse effects remain (i.e. consideration of Imperative Reasons of Overriding Public Interest (IROPI)) and identification of compensatory measures

2.12 The first step in the sequence of tests is to establish whether an appropriate assessment is required. This is often referred to as HRA screening. The purpose of HRA screening is to determine, in view of best available scientific knowledge, whether a plan or project, either alone or in combination with other plans or projects, could have likely significant effects (LSE) on a European site, in view of that site's conservation objectives.

2.13 For this purpose and as a result of case law 'likely' means 'possible', while a 'significant' effect is one which could undermine the Conservation Objectives of a European site. To this end the HRA process applies the 'Precautionary Principle'[3] to European sites. If the competent authority determines that there are no LSE (including 'in combination' effects from other plans or projects), then no further assessment is necessary and the plan or project can, subject to any other issues, be taken forward. If, however, the competent authority determines that there are LSE, or if there is reasonable scientific doubt, then the next step in the process must be initiated and a detailed appropriate assessment undertaken. While a judgment over likely significant effects must be precautionary, the court in R (Boggis) v Natural England [2009] EWCA Civ 1061 also noted that there must be a 'real', rather than a hypothetical, risk to European sites.

2.14 This is relevant to the assessment of the FRMP measures; while many measures commit to the production, update and/or delivery of other plans (such as Water Level Management Plans, WLMPs), or the assessment of options for, or a general commitment to, flood risk management assets in certain locations, the ability to identify 'real' rather than hypothetical impacts is constrained by the fact that considerable further work is needed at lower tiers to develop the plans or schemes

in question before specific impact pathways can be identified with any confidence. For example, whether a given WLMP poses a likely significant effect on a given European site will depend entirely on the proposals it contains, which are not set by FRMP measures that commit to updating WLMPs. Similarly, the potential for likely significant effects to arise from 'implementing flood risk management improvements' will vary significantly depending on what is proposed and how it is to be delivered, which may not be determined at the FRMP level; a set-back flood embankment or a flood relief channel may have no implications for a given European site compared to sheet piling in the river.

2.15 The purpose of the appropriate assessment is to carry out sufficient scientific investigation to ascertain whether the plan or project, alone or in combination with other plans or projects, will not adversely affect the integrity of European sites, in view of their conservation objectives and considering any design modifications or mitigation (but not compensatory measures, which can only be considered in exceptional circumstances when requirements for the above HRA Stages 3 and 4 have been met).

2.16 Plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity of the European site(s) in question. Plans and projects with predicted adverse impacts on European sites may still be permitted if there are no alternatives to them and there are Imperative Reasons of Overriding Public Interest (IROPI) as to why they should go ahead. In such cases, compensation would be necessary to ensure the overall integrity of the site network. To ascertain whether or not site integrity will be affected, an Appropriate Assessment should be undertaken of the plan or project in question:

2.17 Over time HRA has come into wide currency to describe the overall process set out in the Regulations from screening through to IROPI. This has arisen in order to distinguish the process from the individual stage described in the law as an 'Appropriate Assessment'.

2.18 The HRA has been carried out being mindful of the implications of European case law in 2018, notably the Holohan ruling and the People over Wind ruling, both discussed below.

Figure 1. Stages of the HRA process (adapted from SNH (2015))

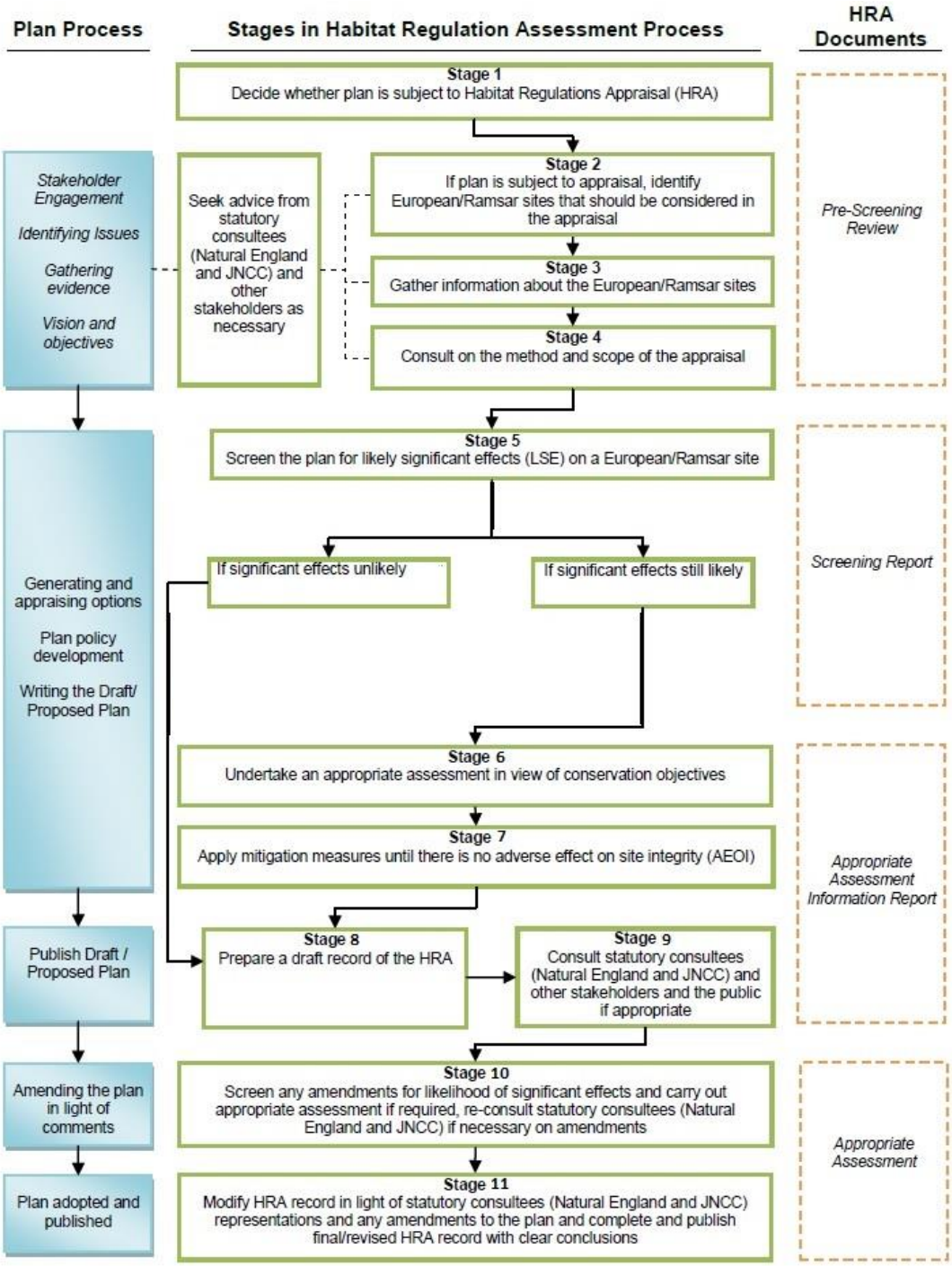


Figure 1 accessible description

Figure 1 shows the overall plan process, stages in Habitat Regulation Assessment process and HRA documents involved in the HRA process.

The first part of the plan process involves stakeholder engagement, identifying issues, gathering evidence and the vision and objectives. Advice may be needed from statutory consultees, such as Natural England and JNCC, and other stakeholders as necessary. The stages include:

1. Decide whether the plan is subject to Habitat Regulations Appraisal.

2. If the plan is subject to appraisal, identify European and Ramsar sites that should be considered in the appraisal.
3. Gather information about European sites and Ramsar sites.
4. Consult on the method and scope of the appraisal.

A pre-screening review document is needed for stages 1 to 4.

The second part of the plan process involves generating and appraising options, planning policy development and writing the draft/proposed plan. The stages include:

5. Screen the plan for likely significant effects (LSE) on a European or Ramsar site. If the significant effects are unlikely, then move on to stage 8. If significant effects are likely, then continue to stage 6.
6. Undertake an appropriate assessment in view of conservation objectives.
7. Apply mitigation measures until there is no adverse effect on site integrity (AEOI).

A screening report is needed for stage 5 and appropriate assessment information report is needed for stage 6 to 9.

The third part of the plan process involves publishing the draft or proposed plan. The stages include:

8. Prepare a draft record of the HRA.
9. Consult statutory consultees (Natural England and JNCC), other stakeholders and the public if appropriate.

The fourth part of the plan process involves amending the plan in light of comments. This includes Stage 10:

10. Screen any amendments for likelihood of significant effects and carry out appropriate assessment if required, re-consult statutory consultees (Natural England and JNCC) if necessary, on amendments.

An appropriate assessment document is needed for stage 10 and 11 of the plan process.

In the fifth and final part of the process the plan is adopted and published. This includes Stage 11:

11. Modify HRA record in light of statutory consultees (Natural England and JNCC) representations and any amendments to the plan and complete and publish final/revised HRA record with clear conclusions.

Relevant case law

2.19 As a consequence of the UK's exit from the EU, it was necessary for various amendments to be made to the Habitats Regulations. These changes were required to ensure that England and Wales (and Scotland through separate regulations) continue to maintain the same standard of protection afforded to European sites. The Habitats Regulations remain in force, including the general provisions for the protection of European sites and the procedural requirements to

undertake HRA. The changes made were only those necessary to ensure that they remain operable following the UK's exit from the EU.

2.20 Although the UK is no longer part of the EU, a series of prior rulings of the Court of Justice of the European Union (CJEU) are relevant and have been considered when preparing this document. These rulings and their implications for this HRA are summarised in Table 1.

Table 1. Case law relevant to the HRA of the FRMP

Case	Ruling	Relevance to the HRA of the FRMP
People Over Wind and Sweetman v Coillte Teoranta (C-323/17)	The ruling of the CJEU in this case requires that any conclusion of 'no likely significant effect' on a European site must be made prior to any consideration of measures to avoid or reduce harm to the European site. The determination of likely significant effects should not, in the opinion of the CJEU, constitute an attempt at detailed technical analyses. This should be conducted as part of the appropriate assessment.	NatureScot has published guidance on the implications of this ruling for HRA (SNH, 2019). It will be necessary to distinguish between those measures which are intended to avoid or reduce harmful effects on a European site and those elements of the flood management plan that may incidentally provide some degree of mitigation, but which are intrinsic or essential parts of the plan itself. SNH advises that intrinsic parts of a plan can be considered at the screening stage of HRA. If it can be concluded that the Flood management plan area will have no adverse effect on any European site, in the absence of mitigation, it will be possible to conclude 'no likely significant effects', and the need for further detailed appropriate assessment will be 'screened out'.

Case	Ruling	Relevance to the HRA of the FRMP
Waddenzee (C-127/02)	The ruling in this case clarified that appropriate assessment must be conducted using best scientific knowledge, and that there must be no reasonable scientific doubt in the conclusions drawn. The Waddenzee ruling also provided clarity on the definition of 'significant effect', which would be any effect from a plan or project which is likely to undermine the conservation objectives of any European site.	Adopting the precautionary principle, a 'likely' effect in this HRA is interpreted as one which is 'possible' and cannot be objectively ruled out. The test of significance of effects has been conducted with reference to the conservation objectives of relevant European sites.
Holohan and Others v An Bord Pleanála (C-461/17)	The conclusions of the Court in this case were that consideration must be given during appropriate assessment to: • effects on qualifying habitats and/or species of a SAC or SPA, even when occurring outside of the boundary of a European site, if these are relevant to the site meeting its conservation objectives, and • effects on non-qualifying habitats and/or species on which the qualifying habitats and/or species depend and which could result in adverse effects on the integrity of the European site.	This relates to the concept of 'functionally-linked habitat', i.e. areas outside of the boundary of a European site which supports its qualifying feature(s). In addition, consideration must be given to non-qualifying features upon which qualifying habitats and/or species rely.

Case	Ruling	Relevance to the HRA of the FRMP
T.C Briels and Others v Minister van Infrastructuur en Milieu (C-521/12)	The ruling of the CJEU in this case determined that compensatory measures cannot be used to support a conclusion of no adverse effect on site integrity.	Compensation can only be considered at the relevant stage of HRA and not during appropriate assessment. Compensation must be delivered when appropriate assessment concludes that there will be adverse effects on site integrity.

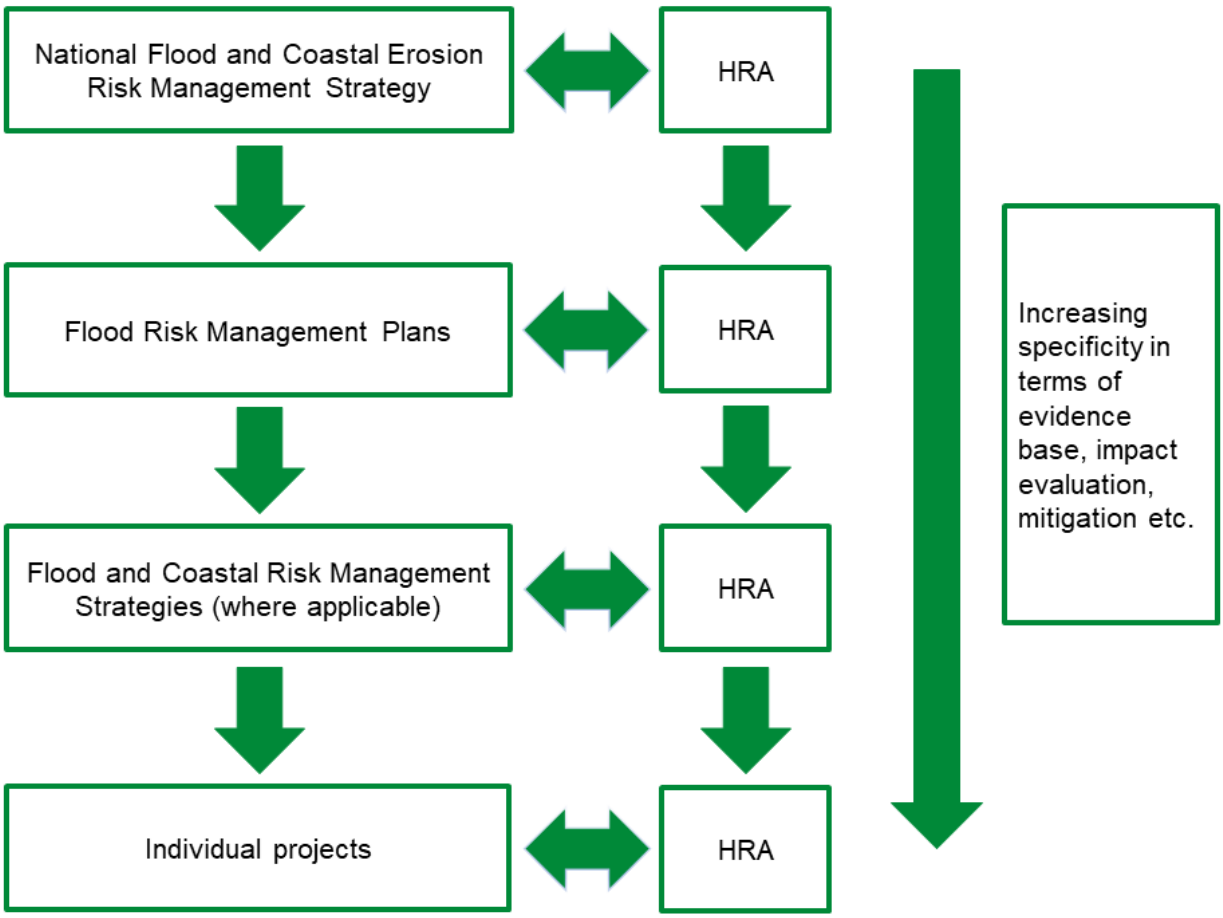
Purpose of this document

2.21 This document forms the HRA for the Anglian FRMP. It has been prepared with regard to best scientific knowledge and an examination of potential impacts of the Flood Risk Management Plan on European Sites.

2.22 Project-related HRA often requires bespoke survey work and novel data generation in order to accurately determine the significance of effects. In other words, to look beyond the risk of an effect to a justified prediction of the actual likely effect and to the development of avoidance or mitigation measures.

2.23 However, there is a tacit acceptance that HRA can be tiered and that all impacts are not necessarily appropriate for consideration to the same degree of detail at all tiers as illustrated in Figure 2 below. Note that some measures in the FRMPs come from other plans and are reflected in the FRMP for consistency and completeness.

Figure 2. Tiering in HRA of Land Use Plans



2.24 In any strategic plan, there are numerous measures for which there is a limit to the degree of assessment that is possible at this plan level. This is because either:

- the measure in question does not contain any specific details describing what will be delivered or where so literally cannot be assessed in detail at the plan level
- development of a specific type is identified but the nature of the potential impacts are dependent on exactly how the development will be designed and constructed and therefore cannot be assessed in detail at the plan level but rather at the scheme level

2.25 For example, NatureScot has published guidance[4] that indicates a measure or initiative in a higher tier plan can be screened out without further analysis if:

a. they are intended to protect the natural environment
b. they will not themselves lead to development or other change
c. they make provision for change but could have no conceivable effect on a European site
d. they make provision for change but could have no significant effect on a European site
e. effects on any particular European site cannot be identified because the measures are too general or lack any spatial definition

2.26 Similarly, the Habitats Regulations Assessment Handbook[5] sets out three criteria in section F.10.1.5, that it considers would make it reasonable to defer further assessment to a lower tier plan or project:

a. the higher level plan assessment cannot reasonably predict any effect on a European site in a meaningful way

b. the lower level plan or project, which will identify more precisely the nature, timing, duration, scale or location of the measure, and thus its potential effects, will have the necessary flexibility over the exact nature, timing, duration, scale and location of the measure to enable an adverse effect on site integrity to be avoided

c. the HRA of the lower tier plan or project is required as a matter of law or government policy

2.27 In these cases, the HRA focusses on setting down-the-line requirements for more detailed assessment at the scheme level that can be included in the plan to ensure that whatever proposals come forward will not result in adverse effects on integrity. On these occasions the advice of Advocate-General Kokott[6] should be considered. She commented that: 'It would …hardly be proper to require a greater level of detail in preceding plans [rather than planning applications] or the abolition of multi-stage planning and approval procedures so that the assessment of implications can be concentrated on one point in the procedure. Rather, adverse effects on areas of conservation must be assessed at every relevant stage of the procedure to the extent possible on the basis of the precision of the plan. This assessment is to be updated with increasing specificity in subsequent stages of the procedure**'**.

2.28 Similarly, published EU guidance on HRA states: 'Where one or more specific projects are included in a plan in a general way but not in terms of project details, the assessment made at plan level does not exempt the specific projects from the assessment requirements of Article 6(3) at a later stage, when much more details about them are known.'[7]

2.29 It is also important to consider the approach taken regarding coastal defence schemes and strategies. The stance throughout all FRMP HRAs is that, provided measures are already covered by the SMP/Coastal Strategy process or another HRA process, then these measures are effectively included in the FRMPs for completeness. The FRMPs are not the source plans for these schemes and they are already committed elsewhere. The SMP and Coastal Strategies will be updated as part of their normal cycle and that will include revision to their HRAs which will take account of any changes in evidence. Each scheme will also have its own HRA before it is consented. In these cases, the DTA handbook states that plan elements can be screened out if they have, or will be subject to, HRA under another plan and this plan (the FRMP) would not materially change if they were omitted.

2.30 This is the approach taken in the HRA of the FRMP to avoid confusing the FRMP with other plan processes (such as Shoreline Management Plan (SMP) and Coastal Strategy processes) that have their own separate HRA, or the individual schemes that are referenced in the FRMP and will be taken forward subject to significant

further work including outline design, detailed design, securing of funding, community consultation and securing of necessary consents and permits. The fact that a scheme is referenced in the FRMP does not prejudge the down-the-line permitting processes.

The 'in Combination' Scope

2.31 It is a requirement of the Habitats Regulations that the impacts and effects of any land use plan being assessed are not considered in isolation but in combination with other plans and projects that may also be affecting the European site(s) in question.

2.32 When undertaking this part of the assessment it is essential to bear in mind the principal intention behind the legislation, i.e. to ensure that those projects or plans which in themselves have minor impacts are not simply dismissed on that basis but are evaluated for any cumulative contribution they may make to an overall significant effect. In practice, in combination assessment is therefore of greatest relevance when the plan would otherwise be screened out because its individual contribution is inconsequential. The overall approach is to exclude the risk of there being unassessed likely significant effects in accordance with the precautionary principle. This was first established in the seminal Waddenzee[8] case.

2.33 For the purposes of this HRA, in-combination assessment is focussed on the plans and projects identified in the Strategic Environmental Assessment (SEA) Environmental Report of the FRMP. The plans and projects were identified in the SEA as having a significant interaction with the LFRMP for biodiversity, flora and fauna and required consideration. The key relevant plans and projects with a potential for in-combination effects are:

- Cambridgeshire's Local Flood Risk Management Strategy
- draft Anglian River Basin Management Plan (RBMP)
- Essex Local Flood Risk Management Strategy
- evolving Anglian Water company Drainage and Wastewater Management Plan (DWMP)
- evolving Broadland Futures Initiative Strategy
- evolving Cambridgeshire Fens Flood Risk Management Strategy
- SMP 4 Gibraltar Point to Hunstanton (The Wash)
- SMP 5 Hunstanton to Kelling Hard (North Norfolk)
- SMP 6 Kelling Hard to Lowestoft (Kelling to Lowestoft)
- SMP 7 Lowestoft to Felixstowe (Lowestoft Ness to Felixstowe Languard)
- SMP 8 Essex and South Suffolk
- Lincolnshire Local Flood Risk and Water Management Strategy
- Milton Keynes Local Flood Risk Management Strategy
- Norfolk Local Flood Risk Management Strategy
- Peterborough Local Flood Risk Management Strategy

- Thames Estuary TE2100 Plan
- Great Yarmouth Local Plan
- Waveney Local Plan
- Bedford Local Plan
- Greater Norwich Local Plan
- South Norfolk Village Clusters Housing Allocations Plan
- King’s Lynn & West Norfolk Local Plan
- Huntingdonshire Local Plan
- Central Bedfordshire Local Plan
- The Local Plan for The Broads
- Peterborough Local Plan
- Greater Cambridge Local Plan
- Breckland Local Plan
- Great Yarmouth Local Plan
- North Norfolk Local Plan
- Kettering Local Plan
- Wellingborough Local Plan
- East Northamptonshire Local Plan
- Corby Local Plan
- Northampton Local Plan
- South Northamptonshire Local Plan
- Daventry Local Plan
- Babergh Local Plan
- East Suffolk Local Plan
- Ipswich Local Plan
- West Suffolk Local Plan
- Milton Keynes Local Plan
- Boston Local Plan
- East Lindsey Local Plan
- West Lindsey Local Plan
- Lincoln Local Plan
- North Kesteven Local Plan
- South Kesteven Local Plan
- South Holland Local Plan
- North Lincolnshire Local Plan
- North-East Lincolnshire Local Plan
- Basildon Local Plan
- Braintree Local Plan
- Brentwood Local Plan
- Castle Point Local Plan

- Chelmsford Local Plan
- Colchester Local Plan
- Epping Forest Local Plan
- Harlow Local Plan
- Maldon Local Plan
- Rochford Local Plan
- Tendring Local Plan
- Uttlesford Local Plan
- Broxbourne Local Plan
- Dacorum Local Plan
- East Herts Local Plan
- Hertsmere Local Plan
- North Hertfordshire Local Plan
- St Albans Local Plan
- Stevenage Local Plan
- Three Rivers Local Plan
- Watford Local Plan
- Welwyn Hatfield Local Plan
- Southend-on-Sea Local Plan

2.34 The potential for ‘in combination’ effects between these plans and projects and the FRMP are discussed later in this document.

3. Pathways of Impact

Direct habitat loss

3.1 Any permanent, irreversible, habitat loss from a designated site that will result in the loss of qualifying habitats and / or species, or habitats that support the designated species, will be adverse, although to affect the integrity of the site (the coherence of its structure and function) the loss must be sufficiently adverse that it materially impairs the achievement of the Conservation Objectives for the site.

3.2 Various developments can result in the loss of habitat in European Sites, either temporary or permanent. Temporary habitat loss (e.g. such as due to the need for a construction period footprint to encroach on a site) is potentially reversible depending on what the site is designated for, and there is also potential for deploying mitigation measures to avoid adverse effects on site integrity. In contrast, the permanent loss of designated habitat will result in a reduction of coverage of a potentially very rare ecosystem, with potential knock-on impacts on dependent qualifying species.

3.3 Plans or projects that result in the loss of land from a SAC can be approved in certain situations (please see Defra (2012)[9], even if the loss is sufficient to adversely affect the integrity of an SAC, if three sequential tests are met:

- no feasible alternative solutions to the plan or project exist that are less damaging
- imperative reasons of overriding public interest (IROPI)
- compensatory measures secured to ensure that the overall coherence of the European Site network is maintained

Inappropriate Coastal Management Including Coastal squeeze

3.4 Inappropriate coastal management covers any coastal management activities that would interfere with natural coastal processes to such an extent that they would potentially interfere with the ability of European sites to achieve their conservation objectives. Examples of inappropriate coastal management include:

- Reduced sediment supply to adjacent frontages, resulting in loss of habitat area. For example, defending the Holderness Coast in East Yorkshire results in a reduction in the amount of longshore sediment that would otherwise be transported into the Humber Estuary SAC/SPA/Ramsar site and this in turn could affect the persistence of features that require a continued supply of sediment, such as Spurn Point.
- Presence of flood risk management defences causing habitat erosion seawards of those defences due to wave reflection. This is more of an issue

with some types of defence (such as sheet metal piling) than with other types of defence.

- Restriction of the area of intertidal habitat in front of the flood risk management defences.
- Coastal squeeze.

3.5 Coastal squeeze is defined by government as 'the loss of natural habitats or deterioration of their quality arising from anthropogenic structures or actions, preventing the landward transgression of those habitats that would otherwise naturally occur in response to sea level rise in conjunction with other coastal processes. Coastal squeeze affects habitat on the seaward side of existing structures.'[10]

3.6 Measures which involve a 'Hold the Line' approach by establishing a hard structure or maintaining the existing standard of protection by improving the defences, have the potential to result in the loss of seaward habitats as a consequence of coastal squeeze. The process of coastal squeeze prevents the landward transgression of habitats in response to climate change and resulting sea level rise. Over time, unmitigated coastal squeeze would inevitably lead to the cumulative loss of designated habitats and supporting functionally-linked habitats. Coastal squeeze impacts due to measures have already been fully explored and mitigation or compensation quantified if necessary through the SMP and Coastal Strategy process and their HRAs, and through the Flood and Coastal Erosion Risk Management (FCERM) National Strategy 2021 and compensation delivered in the form of the Habitat Compensation Programme. Therefore, coastal squeeze is scoped out of this HRA.

3.7 All the FRMPs contain measures which refer to implementing or updating SMPs or Coastal Strategies or flood and coastal erosion risk management schemes that are contained within those documents. In commenting on the draft version of this report Natural England advised the SMP Health Check documents will include detail on what changes to SMP HRAs will be required to account for (for example) changes in sea level rise predictions. However, these reports have not yet been completed or published, and as such this information is not yet available.

3.8 The approach taken throughout all FRMP HRAs is that, provided such schemes are already covered by the SMP/Coastal Strategy process or another HRA process, these measures are effectively included in the FRMPs for completeness. The FRMPs are not the source plans for these schemes and they are already committed elsewhere. The SMP and Coastal Strategies will be updated as part of their normal cycle and that will include revision to their HRAs which will take account of any changes in evidence. Each scheme will also have its own HRA before it is consented.

Disturbance

3.9 Flood risk management construction works can result in noise or visual disturbance of qualifying species in European sites, both during the construction and operational periods. For example, noise and visual disturbance arising from construction may result in temporary behavioural changes in otters (e.g. disturbance in holts, displacement from specific stretches of the river). Piling noise during construction of defences could displace over wintering or breeding birds for which an SPA is designated. Three of the most important factors determining the magnitude of disturbance from construction schemes appear to be species sensitivity, proximity of the disturbance source and timing / duration of the disturbance.

Birds

3.10 Development schemes (such as those for flood risk management assets) can result in the disturbance of qualifying SPA / Ramsar bird species in European sites or functionally linked habitats and this can apply whatever activity the bird is undertaking, whether nesting, foraging, loafing or roosting. Noise and visual disturbance arising from construction activities may result in behavioural changes (e.g. flight from the nest, cessation of foraging) in birds. Furthermore, post-construction disturbance from site usage, road traffic and operational lighting might also arise. Three of the most important factors determining the magnitude of disturbance appear to be species sensitivity, proximity of the disturbance source and timing / duration of the disturbance. Generally, the most disturbing visual and auditory stimuli are likely to involve irregular, infrequent, unpredictable loud noise events, movements or vibrations. Birds are least likely to be disturbed by activities that involve regular, predictable and quiet patterns of sound or movement. The further any activity is from the birds, the less likely it is to result in disturbance.

3.11 An increasing amount of research on visual and noise disturbance of waterfowl from construction (and other activities) is now available. Both visual and noise stimuli may elicit disturbance responses, potentially affecting the fitness and survival of waterfowl and waders. Noise is a complex disturbance parameter requiring the consideration of multiple parameters, including the fact that it is not described on a linear scale, its nonadditive effect and the source-receptor distance. A high level of noise disturbance constitutes a sudden noise event of over 60dB or prolonged noise of over 72dB. Bird responses to high noise levels include major flight or the cessation of feeding, both of which might affect the survival of birds if other stressors are present (e.g. cold weather, food scarcity).

3.12 Generally, research has shown that above noise levels of 84 dB waterfowl show a flight response, while at levels below 55dB there is no effect on their behaviour[11]. These two thresholds are therefore considered useful as defining two extremes. The same authors have advised that regular noise levels should be below 70 dB at the bird, as birds will habituate to noise levels below this level[12]. The Waterbird Disturbance Mitigation Toolkit published by the Institute of Estuarine & Coastal

Studies in 2013, summarises the key evidence base relating to the noise disturbance impact pathway[13]. Generally, noise is attenuated by 6 dB with every doubling of distance from the source. Impact piling, the noisiest construction process of approx. 110 dB at 0.67m from source, will therefore reduce to 67-68dB by 100m away from the source. The loudest construction noise should therefore have fallen to below disturbing levels by 100m, and certainly by 200m, away from the source even without mitigation. Note that this is a rule of thumb and does not obviate the need for application-level noise modelling. However, comparison with baseline noise levels will also be important in any assessment rather than purely using comparison with the 70 dB metric (see paragraph below).

3.13 An alternative approach to assessment is to consider the relative change in the noise levels experienced by birds, rather than an absolute noise threshold. There are no formal guidelines that define a change threshold that is deemed disturbing to waterfowl and waders, but they are thought to have hearing comparable to humans. For humans a change of 3 dB defines the threshold for a change in noise to be perceptible (in other words, a change of 1 or 2 dB cannot be detected by the human ear). However, there is a significant difference between being able to notice that a noise has gotten louder and finding the increase in noise to be sufficiently intolerable that it causes displacement or otherwise significantly disrupts activity. Therefore, 3 dB may be an excessively precautionary threshold to use for judging disturbance. Due to the logarithmic nature of the decibel scale a change of 5 dB increase at the receptor is approximately a 50% increase in perceived loudness while a 10 dB increase is a doubling in perceived loudness or sound intensity. It is reasonable to assume that an increase of 10 dB would run a high risk of causing adverse impacts to bird behaviour such as flushing, for the duration of exposure.

3.14 Visual disturbance is generally considered to have a higher impact than noise disturbance as, in most instances, visual stimuli will elicit a disturbance response at much greater distances than noise[14]. For example, a flight response is triggered in most species when they are approached to within 150m across a mudflat. Visual disturbance can be exacerbated by workers operating equipment outside machinery, undertaking sudden movements and using large machinery. Some species are particularly sensitive to visual disturbance[15], including curlew (taking flight at 275m), redshank (at 250m), shelduck (at 199m) and bar-tailed godwit (at 163m). In some areas, greater distances have been agreed between Environment Agency and Natural England, at least for purposes of HRA Screening. For example, in the Humber Estuary area have agreed a precautionary distance of 300m for the purposes of assessment of bird disturbance.

Fish / Marine Mammals

3.15 Fish use sound for vital life functions, requiring it for completion of their life cycle as well as maintaining productivity. A review of 115 primary studies (66 of which were investigating fish species) highlights that noise disturbance leads to a wide range of impacts in fish, including their development, anatomy, physiology, stress levels and

behaviour[16]. A study comparing the foraging behaviour of perch and roach, found that both species showed significantly fewer feeding attempts when exposed to motorboat noise[17]. For roach, which are better hearing than perch, no habituation to noise occurred over time. In a study of pink snappers (similar to many other commercial species such as tuna, cod and haddock), it was determined that a single seismic air gun with a source noise level of 222.6dB re 1uPa resulted in extensive damage to the ears, with no apparent recovery after 58 days[18]. The impacts of noise may not be immediately visible, as demonstrated by a noise playback experiment on perch, carp and gudgeon. Exposure of the fish to underwater ship noise, resulted in cortisol increases of between 81% to 120% compared to control values[19]. Notwithstanding this evidence, it is important to note that extrapolations from noise impact studies to different settings or species should be made with caution.

3.16 Construction noise also presents a significant threat (both regarding injury and mortality) to marine mammals, including harbour porpoise and grey seals. For example, the density of harbour porpoise has been shown to be significantly reduced for several kilometres surrounding seismic surveys and impact piling activities[20] [21]. Cetaceans produce and receive sound over a great range of frequencies for use in communication, orientation, predator avoidance and foraging. Interference with these important behaviours has the potential to result in significant negative impacts. Harbour porpoise are high frequency cetaceans that have low sensitivity thresholds to impulsive sound sources. Anthropogenic sound has the potential to result in direct effects on the hearing ability of mammals (among other impacts, such as behavioural responses and masking of other underwater sounds), including Permanent Threshold Shifts (PTS) and Temporary Threshold Shifts (TTS)[22]. Some construction works within the marine environment may require Unexploded Ordnance (UXO) detonation, which involves impulsive sound elements stretching over tens of kilometres. In practice, it is typically not known whether such works will be required. Guidance from the Joint Nature Conservation Committee (as utilised for example in the HRA of the South-West England Marine Plan) confirms that a likely significant effect via underwater noise could affect European sites up to 50km distant depending on the nature of the works.

Hydrology

3.17 The water level, its flow rates and the mixing conditions are important determinants of the condition of European sites and their qualifying features. Hydrological processes are critical in influencing habitat characteristics in wetlands and coastal waters, including current velocity, water depth, dissolved oxygen levels, salinity and water temperature. In turn these parameters indirectly determine the short- and long-term viability of plant and animal species, as well as overall ecosystem composition.

3.18 Many animal species are directly sensitive to hydrological changes, including the drying and excessive flooding of habitat. For example, many species (partially)

restricted to the aquatic environment are sensitive to periodic or permanent drying, because this reduces the extent of supporting habitat available. This includes species such as the great-crested newt, southern damselfly, white-clawed crayfish and a diverse array of fish (e.g. Atlantic salmon, river lamprey, sea lamprey). In contrast, excessive flooding can result in sub-optimal water levels for foraging birds, such as small waders. If water is too deep, some species may not be able to access their primary prey species, with potential implications for foraging efficiency.

3.19 Wetland, riverine, estuarine and coastal habitats rely on hydrological connections with other surface water systems. A supply of water within natural limits is fundamental to maintaining the ecological integrity of sites. However, while the natural fluctuation of water levels within narrow limits is desirable, excess or too little water supply might cause the water level to be outside of the required range of plant and animal species. This might lead to the loss of the structure and function of aquatic habitats.

3.20 FRMPs generally propose measures to reduce the magnitude and impacts of potential flooding events. This may involve a wide range of interventions, such as flood defences and natural flood management techniques. If any such measures are delivered in the proximity to hydrology-dependent European sites, they may have implications for the water level in designated site boundaries. For example, a natural flood management intervention delivered immediately upstream of a designated floodplain or waterbody, while intended to restore the hydrological regime to a natural baseline, could reduce the volume of freshwater input to and flooding regime in that downstream European site.

Pollution

3.21 The quality of the water that feeds European sites is an important determinant of the nature of their habitats and the species they support. Poor water quality can have a range of environmental impacts:

- At high levels, toxic chemicals and metals can result in immediate death of aquatic life, and can have detrimental effects even at lower levels, including increased vulnerability to disease and changes in wildlife behaviour.
- Eutrophication, the enrichment of water with nutrients, increases plant growth and consequently results in oxygen depletion. Algal blooms, which commonly result from eutrophication, increase turbidity and decrease light penetration. The decomposition of organic wastes that often accompanies eutrophication deoxygenates water further, augmenting the oxygen depleting effects of eutrophication. In freshwater ecosystems, plant growth is primarily determined by phosphorus concentrations, which are determined by a wide range of sources, including treated sewage effluent from Wastewater Treatment Works and urban surfaces such as roads.
- Some pesticides, industrial chemicals, and components of sewage effluent are suspected to interfere with the functioning of the endocrine system,

possibly having negative effects on the reproduction and development of aquatic life.

3.22 There is an obligation for flood risk protection, management and resilience schemes to consider water quality impacts. Under the Environmental Damage (Prevention and Remediation) (England) Regulations 2015 and the Environmental Permitting (England and Wales) Regulations 2016, it is illegal to pollute watercourses. Individual planning proposals will undergo Preliminary Ecological Appraisal (PEA) or Environmental Impact Assessment (EIA), if identified as Schedule 1 or Schedule 2 proposals by the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. As such, water quality protection measures must by law be introduced on any scheme that could affect the water quality of the river or coastal environment, irrespective of whether part of that environment is designated as an SAC or SPA.

3.23 For this reason, this particular impact pathway has not been used as a basis to screen in measures in this FRMP or identify the need for down-the-line HRA at lower planning tiers, as protecting water quality will be an inherent element in delivery of all measures irrespective of the designation status of linked waterbodies, watercourses and sensitive sites.

Functionally-Linked Land

3.24 While most European sites have been geographically defined in order to encompass the key features that are necessary for coherence of their structure and function, this is not the case for all such sites. Due to the highly mobile nature of waterfowl, it is inevitable that areas of habitat of crucial importance to the maintenance of their populations are outside the physical limits of the European site for which they are an interest feature. However, this area will still be essential for maintenance of the structure and function of the interest feature for which the site was designated and land use plans that may affect this land should still therefore be subject to further assessment. This has been underlined by a recent European Court of Justice ruling (C-461/17, known as the Holohan ruling[23]) which in paragraphs 37 to 40 confirms the need for an appropriate to consider the implications of a plan or project on habitats and species outside the European site boundary provided that those implications are liable to affect the conservation objectives of the site.

3.25 Certain management approaches, while positive for coastal processes, could result in the loss of landward habitats, such as coastal grazing marsh, grassland, reedbeds and arable land. Birds are mobile species and are also dependent on sites outside of formal designations and rely on the availability of a network of feeding and roosting resources over the winter period.

Spread of invasive non-native species

3.26 Invasive non-native species can have detrimental impacts on native species and habitats. Their spread can occur during construction and operation of a development, and via multiple pathways (for example via watercourses or on the treads of construction machinery).

3.27 Under the Wildlife and Countryside Act 1981, as amended, and the Invasive Alien Species (Enforcement and Permitting) Order 2019, it is an offence to cause any plant to spread or grow in the wild outside of its native range. Appropriate biosecurity measures will therefore also be implemented during works carried out during both the construction and operational phases of any scheme to prevent the spread of invasive non-native species, irrespective of whether there are European sites in the vicinity.

4. Test of Likely Significant Effects

4.1 When seeking to identify relevant European sites, consideration has been given primarily to identified impact pathways and the source-pathway-receptor approach, rather than adopting a purely 'zones'-based approach. The source-pathway-receptor approach is a standard tool in environmental assessment. In order for an effect to occur, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism means there is no possibility for an effect to occur. Furthermore, even where an impact is predicted to occur, it may not result in significant effects (i.e. those which undermine the conservation objectives of a European site). Briefly defined, pathways are routes by which a change in activity can lead to a significant effect upon a European site.

4.2 The likely zone of impact (also referred to as the likely 'zone of influence') of a project or plan is the geographic extent over which significant ecological effects are likely to occur. The zone of influence of a plan will vary depending on the specifics of a particular proposal and must be determined on a case-by-case basis with reference to a variety of criteria, including:

- the nature, size / scale and location of the plan
- the connectivity between the plan and European sites, for example through hydrological connections or because of the natural movement of qualifying species
- the sensitivity of ecological features under consideration
- the potential for in-combination effects

4.3 There is no geographical limit beyond which plans need not be considered by HRA. However, as a first step in identifying European sites which may be relevant, a search was made for sites within the River Basin District, or within 10km of the River Basin District. Consideration was then given to their hydrological sensitivity and the potential for them to be connected to flood risk management measures. The European sites identified within this search area is given in Tables 2 and 3. Note that there are numerous European sites within the River Basin District or within 10km of it which are <u>not</u> hydrologically sensitive or likely to be affected by flood defences or are hydrologically sensitive but would not be linked to potential flood risk management activities. These are not listed below as they are scoped out of the HRA process.

4.4 There are clusters of hydrologically sensitive European sites across the Anglian River Basin District, which can be divided into freshwater and coastal sites. These European sites are characterised by a gradient in their extent of hydrological dependency. While some sites (e.g. the River Wensum SAC) form an integral component of the RBD because they constitute freshwater bodies, others (e.g. Wicken Fen Ramsar site) are not themselves freshwater bodies but rely on continuous freshwater input from surface waterbodies and groundwater sources for sustained flooding and / or permanent standing water. A third category of European

sites have impeded drainage and rely on freshwater supply from a combination of sources, including groundwater and surface water. Generally, rivers and sites with strong hydrological linkages (e.g. those on floodplains or bisected by major freshwater bodies), are likely to be most at risk from the measures contained in the Anglian FRMP. Regardless, European sites with less obvious or unclear hydrological connections that rely on extended periods of wetting, are nonetheless included in this assessment.

4.5 Estuarine, coastal and some inland terrestrial European sites have additional sensitivities (beyond hydrology) potentially linking to FRMP measures. For example, marine SPAs, Ramsars and SACs (e.g. The Wash & North Norfolk Coast SAC, Blackwater Estuary SPA and Essex Estuaries SAC) are designated for, or depend on, intertidal habitats such as Atlantic saltmarshes and mudflats. These estuarine / coastal habitats are under threat from coastal squeeze, whereby development or flood defences immediately inland, prevent their landward migration in response to sea level rise. FRMP measures adjoining these sites have the potential to contribute to habitat loss from estuarine and coastal sites through coastal squeeze. Furthermore, all SPAs / Ramsars, whether inland or on the coast, are sensitive to visual and noise disturbance arising during the implementation period of FRMP schemes, for example due to the presence of construction workers or the use of noisy construction equipment (e.g. piling).

Freshwater European sites

4.6 There are two main concentrations of freshwater sites (i.e. those which are entirely or predominantly freshwater influenced) in the Anglian region:

- Cambridgeshire – Ouse Washes SAC/SPA/Ramsar, Nene Washes SAC/SPA/Ramsar, Portholme SAC, Orton Pit SAC, Woodwalton Fen Ramsar site, Wicken Fen Ramsar site, Chippenham Fen Ramsar site, Fenland SAC; and
- Norfolk – Norfolk Valley Fens SAC, River Wensum SAC, Broadland SAC/SPA, Roydon Common Ramsar, Dersingham Bog Ramsar, Roydon Common & Dersingham Bog Ramsar site, Waveney & Little Ouse Valley Fens SAC/Ramsar and Minsmere-Walberswick Heaths & Marshes SAC/SPA/Ramsar

4.7 In contrast, the Lincolnshire, Suffolk, Essex and Northamptonshire parts of the River Basin District have relatively few hydrologically sensitive freshwater European sites. Those that do exist include Upper Nene Valley Gravel Pits SPA/Ramsar in Northamptonshire, Baston Fen SAC in Lincolnshire, and Dew's Ponds SAC, Breckland SAC (the wet heathland elements), which also spreads into Norfolk, and Waveney & Little Ouse Valley Fens SAC/Ramsar partially in Suffolk[24].

4.8 Some of the European sites in the RBD (namely Woodwalton Fen, the Ouse Washes and the Nene Washes) are intimately linked to flooding and flood storage. The Ouse Washes and the Nene Washes only exist because they take the flood

water to prevent the flooding elsewhere in the catchment, and so the continued management of those sites as reservoirs is imperative for them to support (at least some of) the qualifying features. However, flooding can also destroy those features, as has occurred on the Ouse Washes.

4.9 None of the measures in these counties have been identified to result in likely significant effects on any hydrologically sensitive freshwater sites. This is generally because the measures are:

- too non-specific to assess meaningfully
- already being implemented
- already subjected to a separate HRA process (e.g. a Coastal Strategy or a SMP will have its own HRA process)
- essentially desk-based
- remote from European sites, or
- worded such that they are about 'investigating' or 'reviewing' or 'identifying opportunities for' interventions, rather than committing to any specific interventions or actions the ground. Any specific schemes that subsequently emerge from the investigation/review will be subject to their own down-the-line HRA process

4.10 Some measures are very specific, such as 'Undertake capital maintenance work as identified on the capital programme to floodgates, sluices, embankments and pumping stations in the Bedford Ouse catchment to maintain the existing flood risk standard of service and to manage the risk of flooding*'* which is accompanied in Flood Plan Explorer by a detailed map showing the specific locations for works to occur. However, these have also been screened out due to a lack of specific impact pathways to European sites.

4.11 One group of measures goes beyond 'investigating', 'reviewing' or 'identifying' by committing to 'delivering' or 'implementing' flood management interventions, making it clear that physical work on the ground will occur. In some instances, particularly for Management Catchment measures, the broad (and, occasionally, specific) location for these measures is known, while details of their implementation are not. Given the absence of details at the FRMP level, and in line with the approach to tiering of HRA set out in Section 2, HRA (including Appropriate Assessment as necessary) must be deferred to later scheme development, lower tier plans, the outline business case and/or the planning application stage. Measures where this screening outcome applies have been categorised as 'No Likely Significant Effect, but down-the-line HRA required'. This approach has been adopted to account for the strategic (and thereby necessarily non-specific) nature of the FRMP, while also identifying the measures with the highest impact potential on European sites.

4.12 One broader matter requiring consideration as part of the Likely Significant Effects process is the extent to which any measures, through committing to the status quo, may be contributing to the exacerbation or persistence of an existing water-related problem at European sites. However, for the Anglian region no specific measures

have been identified that contain proposals that would reinforce a negative situation, subject to down-the-line HRA for any schemes that may emerge from the numerous studies committed to in the FRMP.

4.13 Although not technically within the remit of HRA, it is nonetheless noted that there are several measures that present opportunities for improving the hydrological situation at European sites in affected areas, in conjunction with nature recovery plans and catchment sensitive farming, particularly, although not exclusively, as applied to the key foci for hydrologically sensitive European sites in the Anglian region: Norfolk and Cambridgeshire. This is discussed in the following sections within the context of the current hydrological vulnerability of relevant freshwater European sites.

Applicable across the River Basin District

4.14 Although non-specific, the following broad measures applicable to the River Basin District could give rise to initiatives and opportunities to improve European site hydrology:

- ‘Use evidence from its tactical asset management plans in East Anglia to (where government funding is unlikely to be made available) work in partnership with others to continue maintenance or assess opportunities to deliver environmental benefits across East Anglia in the Anglian River Basin District’.
- ‘Utilise information gathered from previous studies, including but not limited to Natural Flood Management pilot studies and priority heat maps to better inform projects in East Anglia to reduce the risk of flooding and contribute to the delivery of Water Framework Directive objectives in the Anglian River Basin District’.
- ‘Work together to develop and implement collaborative strategic plans in the Anglian River Basin District to create a combined vision and joint strategies for the future management of flood risk’.
- ‘Work with Natural England and Local Authorities to seek opportunities in East Anglia to align flood risk management projects with the development of nature recovery networks to contribute to the improvement and connectivity of the natural environment and where appropriate achieve biodiversity and environmental net gain across East Anglia in the Anglian River Basin District’.
- ‘Work with Natural England in East Anglia to develop long term strategies for adaptation, resilience, and connectivity of designated sites by fully integrating for plans for the water environment to support designated site objectives in the Anglian River Basin District’.
- ‘Work with the Northamptonshire Local Nature Partnership and Nature Improvement Area to create a natural capital investment plan in Northamptonshire’.

4.15 Between them these measures could provide opportunities to improve the hydrological situation in sensitive European sites as well as protecting homes and economic assets.

Specific to Cambridgeshire

4.16 The Site Improvement Plan for the Ouse Washes SPA/Ramsar site notes that 'Notified interests (including breeding birds, overwintering birds and supporting grassland communities) are being adversely affected by increased flooding on the Ouse Washes. Flooding during spring / early summer severely damages the breeding bird interest by flooding nests, drowning young and affecting habitat. Deep flooding during winter also impacts overwintering birds such as wigeon and impacts on the wetland fauna, especially invertebrate populations. Wetland flora is also affected through prolonged submersion, favouring swamp communities over the designated grassland species. Prolonged summer flooding disrupts essential management of the washland, affecting the condition of the grassland for breeding birds in subsequent spring/summer season(s)'.

4.17 Within this context it is noted that one of the measures in the Anglian FRMP states 'Have completed embankment raising on the Ouse Washes as part of the Section 10 works in the River Great Ouse Catchment'. Natural England have agreed in their consultation over this FRMP HRA report that embankment raising would not exacerbate issues regarding inappropriate flooding of the Ouse Washes since the depth of flooding is already significant, although it would also do nothing to address the situation as the embankment will allow a greater volume of floodwater to be stored in the washes. The measure to 'Work in partnership with other organisations to continue to progress the Ouse Washes habitat creation project in the Great Ouse Fens to manage the impact of flooding on the Ouse Washes (Ramsar, Site of Special Scientific Interest, and Special Area of Conservation)' would assist in addressing existing issues, as it is specifically in regard to delivering habitat enhancements identified as being necessary in the Ouse Washes SPA/Ramsar Site Improvement Plan.

4.18 Woodwalton Fen serves as flood alleviation within the Great Ouse Fens. Concerning this SAC, the Fenland SAC Site Improvement Plan states 'Over the past few decades, deteriorating water quality and more persistent flooding have contributed to a reduction in biodiversity and a decline in many site features' and that 'The winter flood water at Woodwalton Fen has high silt and nutrient loads which get deposited on the site and can lie on the fields for prolonged periods. Flooding also delays the start of the grazing and mowing season, which in turn promotes the vigorous growth of invasive species like soft rush and reed…'. The following measure applies to the Great Ouse Fens: 'Undertake capital maintenance work as identified on the capital programme to river channels, sluices, embankments, and pumping stations, where viable, in the Great Ouse Fens to maintain the existing flood risk standard of service (following the tactical plans) and manage the risk of flooding'. The Great Ouse Fens covers a huge area from The

Wash in the north to Cambridge in the south and from Peterborough in the west to Brandon in the east. There is nothing in this measure that specifically commits to works near the European site.

4.19 Regarding Portholme SAC, the Site Improvement Plan states ‘Portholme's MG4 grassland habitat community is very sensitive to prolonged flood events. Given the proximity to the River Ouse, periodic winter flooding is a naturally occurring event. However, there are concerns that the duration of flooding and phosphate/sediment levels in the flood water are having a detrimental effect upon the habitat. Works were implemented in 2010 to assist water movement from north-east corner of the SAC. However, this has been followed by a series of very wet winters where excessive flooding is thought to have been detrimental to the flora’. The SACO for the SAC states ‘The flooding regime has been problematic for this site and in some years and on certain parts of the meadow it has led to a shift away from the H6510 plant community The main issue is caused in years when the site has experienced serve and prolonged flooding during the winter and the nutrient enrichment associated with these prolonged flood events. There is no control over the water levels at Portholme but a ditch has been reinstated to remove flood waters faster’.

4.20 There is no specific measure in the Anglian FRMP regarding the Fenland SAC or Portholme SAC, but the following broad measures applicable to East Anglia as a whole could facilitate delivery of relevant improvements depending on how they are subsequently developed and taken forward by the Environment Agency and partners:

- ‘Work with Natural England and Local Authorities to seek opportunities in East Anglia to align flood risk management projects with the development of nature recovery networks to contribute to the improvement and connectivity of the natural environment and where appropriate achieve biodiversity and environmental net gain across East Anglia in the Anglian River Basin District’.
- ‘Work with Natural England in East Anglia to develop long term strategies for adaptation, resilience, and connectivity of designated sites by fully integrating for plans for the water environment to support designated site objectives in the Anglian River Basin District’.

4.21 As with the Ouse Washes SAC/SPA/Ramsar site, the Nene Washes SAC/SPA/Ramsar Site Improvement Plan states ‘Flooding on the Nene Washes can lead to difficulties in managing the wet grassland habitats and may result in low numbers of target bird species successfully breeding. It may also impact the numbers of wintering birds at the site.’ This is reflected in the SACO which states ‘There is anecdotal evidence that floodwater is taking longer to drain from the washes so that during periods of flood the water can be higher than is ideal for longer. This is currently being investigated through a review of the Water Level Management Plan, along with concerns over the likely increase in flood events which might lead to sub-optimal conditions for wintering birds’.

4.22 Although not specifically identified in the FRMP there are opportunities in the Nene Management Catchment that could help to address this issue in the Nene Washes as follows:

- ‘review the required maintenance for all main river systems, working with partners, communities and landowners in the Nene catchment’
- ‘support the River Nene Restoration Project to deliver the Nene Backwater Restoration project between Northampton and Peterborough in the Nene Catchment’
- ‘support the delivery of projects with a focus on land management, river restoration and habitat biodiversity in the Nene flood plain, Pitsford, Lamport and Cottesbrooke’
- ‘work with landowners, communities and professional partners to identify opportunities for natural flood management schemes in the Nene Catchment’

Specific to Norfolk and Suffolk

4.23 The Broadland SPA/Ramsar and The Broads SAC is known to be at risk of saline intrusion. The Site Improvement Plan for the site states ‘Saline incursion is an increasing threat to much of the Broads' system (although most acutely in the lower Broads) due to climate change and increasing likelihood of both regular and extreme tidal impacts’. Within this context, the measure committing to ‘Manage flood defences from Eccles to Winterton in the Broadland Rivers Management Catchment to prevent saline intrusion to internationally designated sites and consider the development of a long term strategy to manage this risk in the future’ will specifically serve to protect and restore The Broads SAC/Broadland SPA/Ramsar site.

4.24 The Site Improvement Plan also notes that diffuse pollution from agriculture is a concern, and that ‘Water level management is key to the maintenance of features throughout the Broads. As such, it is essential that the correct water management infrastructure and operating protocols are in place to deliver the optimum hydrological regime for the features of interest at a site, also in the context of a changing climate. Operating procedures need to be updated at a number of locations following the implementation of Water Level Management Plan works’. It also states that ‘Appropriate water level management is critical to the maintenace of dykes and infield water features (for breeding waders). Where landowners choose not to enter appropriate agri-environment agreements, other mechanisms need to be found to deliver the appropriate regime’, that ‘Water availability to sites from both surface and groundwater sources will come under increasing pressure in a changing climate. This relates to both management of water within sites and also in their wider catchments’ and that ‘Changes in land management within the catchment of sites as a result of expiring agreements and/or changes in land management practice could have a significant impact on water supply and quality affecting sites’.

4.25 The Site Improvement Plan for the River Wensum SAC identifies that 'In-channel structures are adversely impacting flow by creating impoundment on the river and reducing hydromorphological & ecological connectivity'. This is to be addressed by the River Wensum Restoration Strategy[25] in particular. It also states: 'Major sediment ingress points have been identified on the upper and lower reaches of the river… Sediment sources in the Wensum are derived from catchment runoff and are linked to field drainage systems/ ditch maintenance, erosion, tributary inputs and road drainage' and that 'water quality issues affect all SAC features. There are adverse impacts on water quality from discharge, pesticides and nutrients entering the river from the catchment'.

4.26 With regard to the Norfolk Valley Fens SAC, the Site Improvement Plan notes that 'Water levels are currently not favourable on the entire SAC and some ditches are not adequately managed (Badley Moor (Ba), Fouldon Common (Fo), Thompson Water Carr & Common (Th), Swangey Fen (Sw)). Grip blocking is required at one component site (Coston Fen (Co)) to increase surface water levels and investigations and negotiations are needed to determine and implement the water appropriate level management'. It also notes that 'The hydrological functioning of the site (Sw) is not well understood, and structures to hold water or allow flow are in poor condition and not necessarily correct. Investigation required to understand flows, levels and chemistry. A lack of up to date hydrological and stratigraphical information across the whole site (Flordon Common (Fl)) is preventing a proactive approach to addressing water level/wetness issues, also in relation to the potentially conflicting requirements of Vertigo angustior' and that 'there is a possible impact of nutrient loading from diffuse water pollution from surrounding land'.

4.27 With regard to the Waveney & Little Ouse Valley Fens SAC, the Site Improvement Plan notes that 'Concerns have been expressed about water levels in the SAC. Some areas such as Redgrave and Lopham Fens have already been worked on. Others (Blo' Norton and Thelnetham Fens) are currently being investigated through the Water Level Management Plan process. Historical evidence suggests that water levels have significantly dropped over time and as a result habitats and features have been damaged. Parts of the fen supported swingmoor habitats and these are a poor representation of their former selves'. It identifies a series of investigations that are required into water levels at the SAC. The SACO for the SAC states 'The long-term restoration of the sites to achieve the best outcomes for the SAC features requires renaturalisation of the hydrological processes that created them, in terms of both water quality/chemistry and the water supply mechanisms, including groundwater and surface water regimes'.

4.28 With regard to Roydon Common & Dersingham Bog SAC, the Site Improvement Plan states 'The SAC is at risk from changes in hydrology through drought and abstraction. There is some evidence of dehydration, although it is not clear if there is currently an impact on the site from current abstraction. Reduced ground water levels in dryer years results in increases scrub and nutrients, it assumed this pressure will become more severe as we experience exaggerated winter rainfall

and less in summer'. The document then sets out a series of steps to resolve the issue.

4.29 Related to the specific requirements for The Broads are the following measures applicable to the Broadland Rivers Management Catchment, which could include opportunities to achieve the objectives of the Site Improvement Plan as well as similar enhancements or restoration opportunities for water supply at The Broads SAC/SPA:

- 'consider the outputs of Broadland Futures Initiative in the Broadland area'. The Broadland Futures Initiative (BFI)[26] is a partnership for future flood risk management in the Broadland area. The main goal is to agree a framework for future flood risk management that better copes with changing climate and rising sea level.
- 'work with Natural England, the Broads Authority, Broadland Catchment Partnership, the RSPB, and the Farming and Wildlife Advisory Group in the Broadland area to seek opportunities to engage with existing and emerging farm cluster groups to develop natural flood management and river and floodplain habitat enhancement schemes on a large scale based on the principles of natural function and delivery for the natural environment'
- 'work with landowners and a range of organisations in the Broadland Rivers Management Catchment to demonstrate and encourage the use of land management techniques that will have multiple benefits to managing flood risk and reducing diffuse pollution from agriculture'
- 'work with the Norfolk Rivers Trust, the River Waveney Trust, the RSPB, and the Farming and Wildlife Advisory Group to engage with landowners in the Broadland area to raise awareness of opportunities available through the new Environmental Land Management agri-environment scheme to help increase uptake of flood mitigation and river and floodplain habitat enhancement options at catchment and landscape scales'

4.30 There is no specific measure in the Anglian FRMP regarding the other SACs, but the following broad measures applicable to East Anglia as a whole could facilitate delivery of identified measures and (in the case of Norfolk Valley Fens SAC and Waveney & Little Ouse Valley Fens SAC) could facilitate the necessary investigations into site hydrology:

- 'work with Natural England and Local Authorities to seek opportunities in East Anglia to align flood risk management projects with the development of nature recovery networks to contribute to the improvement and connectivity of the natural environment and where appropriate achieve biodiversity and environmental net gain across East Anglia in the Anglian River Basin District'
- 'work with Natural England in East Anglia to develop long term strategies for adaptation, resilience, and connectivity of designated sites by fully integrating for plans for the water environment to support designated site objectives in the Anglian River Basin District'

4.31 In addition, the aforementioned land management measures regarding the Broadland Rivers Management Catchment would apply to River Wensum SAC, and some parts of Norfolk Valley Fens SAC, as well as The Broads, as these both fall within the Broadland Rivers catchment.

Specific to Northamptonshire

4.32 The measure committing to 'explore opportunities to deliver natural flood management works with landowners through a landscape enterprise network model in Northamptonshire' for the Ouse and Upper Bedford Management Catchment could help to ensure that the Upper Nene Valley Gravel Pits SPA/Ramsar site does not suffer from excessive fluvial flooding by creating new flood storage areas on farmland which could also serve as enhanced functionally-linked habitat for some SPA species which can range up to 10km from the SPA/Ramsar to roost and forage. It could also spread the extent of flooding and reduce excessive flooding of some areas currently.

4.33 The Supplementary Advice on the Conservation Objectives (SACO) for Upper Nene Valley Gravel Pits SPA/Ramsar notes that the amount of time that flood storage area at Northamptonshire Washlands is utilised and inundated may reduce the availability of grassland for lapwing, wigeon and golden plover. Equally, in devising initiatives it will be essential to ensure that the SPA/Ramsar site is not subject to excessive drying as a result of flood water being diverted to other locations. According to the SACO It is essential that the existing main reedbeds within the SPA at Grendon, Titchmarsh, and Stanwick receive a sufficient quantity of water to enable desired water levels to be maintained to prevent the reedbeds drying out.

Coastal European sites

4.34 Hydrologically sensitive coastal European sites, some of which have an important freshwater input to their upper reaches where birds can congregate to feed, occupy parts of the Lincolnshire and Norfolk coast and much of the Suffolk and Essex coastline. There are numerous measures in the Anglian FRMP which refer to implementing or reviewing Coastal Strategies and SMPs. Such plans and strategies present considerable potential for impacts on sensitive coastal sites as set out in Section 3, particularly coastal squeeze, direct habitat loss from coastal defence footprints and (depending on use of land outside SPA boundaries by qualifying wildfowl and waders) loss of functionally-linked land.

4.35 However, the FRMP does not decide the content of either SMP's or Coastal Strategies (including the package of underlying schemes) as these are subject to their own independent development and assessment processes, including HRA. The FRMP's are essentially referencing these strategies and plans to create a complete picture of flood risk management in coastal areas. Therefore, despite the potential SMPs and Coastal Strategies possess for affecting European sites, the FRMP measures relating to those plans will not result in likely significant effects.

4.36 Measures that commit to ‘reviewing’ SMP’s or Coastal Strategies do contain within them the potential to also commit to shaping those plans with a view not simply to managing flood risk to human assets but also positively influencing persistence and/or recovery of coastal habitats. This is not strictly an HRA consideration, since HRA is fundamentally about identifying whether given measures will interfere with the ability of European sites to achieve their conservation objectives, rather than shaping them to positively contribute towards achievement of those objectives. However, those measures could be amended to include reference to shaping the next generation of SMP’s and Coastal Strategies to not only take account of the latest sea level rise projections but also opportunities to improve achievement of conservation objectives for the European sites on the relevant frontage.

Table 2. Freshwater European sites within 10km of the Anglian River Basin District and that are potentially linked to local flood risk management measures

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website[27])	Summary of connectivity with the River Basin District
Breckland SAC	Site is designated for open grassland with grey-hair grass and common bent grass of inland dunes, naturally nutrient-rich lakes or lochs which are often dominated by pondweed, dry heathland and calcareous grassland, alder woodland on floodplains and great crested newt. Breckland is made up of nineteen SSSIs. According to the latest condition assessments: • Barnhamcross Common SSSI is 44.89% unfavourable no change • Berner's Heath, Icklingham SSSI is 100% favourable • Bridgham & Brettenham Heaths SSSI is 100% favourable or unfavourable recovering • Cavenham - Icklingham Heaths SSSI is 1.78% unfavourable no change • Cranwich Camp SSSI is 100% favourable • Deadman's Grave, Icklingham SSSI is 2.03% unfavourable declining • East Wretham Heath SSSI is 3.92% unfavourable declining, Field Barn Heaths • Hilborough SSSI is favourable/unfavourable recovering • Foxhole Heath, Eriswell SSSI is favourable • Gooderstone Warren SSSI is unfavourable recovering • Grime's Graves SSSI is favourable/unfavourable recovering • Lakenheath Warren SSSI is 34.99% unfavourable no change • RAF Lakenheath SSSI is favourable • Stanford Training Area SSSI is 3.12% unfavourable no change and 0.05% unfavourable declining • Thetford Golf Course & Marsh SSSI is 29.05% unfavourable no change	Straddling the boundary between Norfolk and Suffolk, several Breckland interest features (naturally nutrient rich lakes, alder woodland and great crested newt) depend upon a high water table or impeded drainage. Breckland is also an SPA but the SPA interest features are all species of well-drained substrates.

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website[27])	Summary of connectivity with the River Basin District
	• Thetford Heaths SSSI is 6.62% unfavourable no change • Wangford Warren and Carr SSSI is favourable/unfavourable recovering • Weather and Horn Heaths, Eriswell SSSI is 97.77% unfavourable declining and 2.23% destroyed • Weeting Heath SSSI is 20.88% unfavourable no change	
Deben Estuary SPA/Ramsar site	Non-breeding dark-bellied brent goose and pied avocet. The Ramsar site is also designated for narrow-mouthed whorl snail. The underlying SSSI is in 76.84% unfavourable declining condition.	As an estuarine site, the SPA is hydrologically sensitive
Dew's Ponds SAC	Great crested newt. According to the latest condition assessment the underlying SSSI is in favourable condition.	As a collection of ponds the SAC is dependent on a high water table and/or impeded drainage.
Stour & Orwell Estuaries SPA/Ramsar site	Non-breeding dark-bellied brent goose, pintail, grey plover, red knot, dunlin, black-tailed godwit and redshank. Breeding pied avocet. The site is also designated for its waterbird assemblage. The Ramsar site is also designated for its wetland invertebrate assemblage and wetland plant assemblage. The Stour Estuary SSSI is in 1.99% unfavourable declining condition while the Orwell Estuary SSSI is 9.73% unfavourable no change and 11.78% unfavourable declining.	As an estuarine site, the SPA is hydrologically sensitive
Upper Nene Valley Gravel Pits SPA/Ramsar site	Non-breeding bittern, gadwall and golden plover, in addition to a non-breeding waterbird assemblage. According to latest condition assessments the underlying SSSI is in 49.97% favourable or unfavourable recovering condition. The most common reason for unfavourable condition is recreational disturbance, with inappropriate scrub control also given as a reason.	A series of flooded gravel pits (therefore in continuity with groundwater and to some extent with the River Nene) between Northampton and Thrapston in Northamptonshire.

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website[27])	Summary of connectivity with the River Basin District
Portholme SAC	Lowland hay meadows. The underlying SSSI is in unfavourable recovering condition.	Flood meadow adjacent to River Great Ouse south of Huntingdon and hydrologically connected to it.
Fenland SAC (Wicken Fen Ramsar, Chippenham Fen Ramsar, Woodwalton Fen Ramsar)	Purple moor grass meadows, calcareous fens, spined loach, great crested newt. Woodwalton Fen is 97.91% favourable or unfavourable recovering. Wicken Fen and Chippenham Fen are 100% favourable or unfavourable recovering.	Consists of three SSSIs and Ramsar sites: • Wicken Fen SAC • Woodwalton Fen SAC • Chippenham Fen SAC All are located in Cambridgeshire and are hydrologically sensitive.
Orton Pit SAC	Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. and great crested newt. Underlying SSSI is in 28.65 % favourable and 71.35% unfavourable recovering condition.	Located in Cambridgeshire. Water levels in majority are rainwater fed and are maintained by a permanent automated pump.
Ouse Washes SAC, SPA and Ramsar	SAC is designated for spined loach. SPA and Ramsar site are designated for breeding gadwall, mallard, garganey, shoveler, ruff and black-tailed godwit and non-breeding Bewick's swan, whooper swan, wigeon, teal, pintail, shoveler and hen harrier as well as its general waterbird assemblage and breeding bird assemblage. Underlying SSSI is mainly (84.27%) in unfavourable (no change) condition.	Located mainly in Cambridgeshire. Constitutes historic flood storage reservoir to contain floodwater from the River Great Ouse.

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website[27])	Summary of connectivity with the River Basin District
Nene Washes SAC, SPA and Ramsar	SAC is designated for spined loach. SPA and Ramsar site are designated for breeding gadwall, garganey, shoveler and black-tailed godwit and for non-breeding gadwall, Bewick's swan, wigeon, teal, pintail and shoveler. Underlying SSSI is 100% favourable or unfavourable recovering.	Located in Cambridgeshire. Constitutes historic flood storage reservoir to contain floodwater from the River Nene.
Norfolk Valley Fens SAC	Alkaline fens, wet heath, dry heath, purple moor grass meadows, calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae,* alder woodland, narrow-mouthed whorl snail and desmoulin's whorl snail. Coston Fen, Runhall SSSI is in unfavourable no change condition. 13.75% of Foulden Common SSSI and 4.24% of Thompson Water Carr & Common SSSI are unfavourable declining condition due to inappropriate water levels and pollution respectively. The remaining SSSIs are in favourable or unfavourable recovering condition.	Site is made up of 14 individual small fens distributed across Norfolk. As spring fed flush fenland sites they are all hydrologically sensitive.
Waveney & Little Ouse Valley Fens SAC/ Redgrave & South Lopham Fens Ramsar	Purple moor grass meadows, Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* and desmoulin's whorl snail. 17.19% of Weston Fen SSSI is unfavourable no change, the other SSSIs are in favourable/unfavourable recovering condition.	Site is made up of three individual small fens in Suffolk and Norfolk. As spring fed valley fenland sites they are all hydrologically sensitive.
River Wensum SAC	Water courses of plain to montane levels with the *Ranunculion fluitantis* and Callitricho-Batrachion vegetation; Rivers with floating vegetation often dominated by water-crowfoot, Desmoulin`s whorl snail, white-clawed (or Atlantic stream) crayfish, brook lamprey and bullhead. 44.27% of the underlying SSSI is in unfavourable no change condition.	Site lies near Norwich, within the Anglian River Basin District

Broadland SAC, SPA, Ramsar	SAC is designated for: Hard oligo-mesotrophic waters with benthic vegetation of Chara spp., natural eutrophic lakes with Magnopotamion or Hydrocharition-type vegetation, Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae), transition mires and quaking bogs, calcareous fens with Cladium mariscus and species of the Caricion davallianae, alkaline fens, alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae), Desmoulin`s whorl snail, otter, fen orchid, little whorlpool ram's-horn snail. SPA is designated for breeding bittern and marsh harrier and non-breeding, Bewick's swan, whooper swan, wigeon, gadwall, shoveler, hen harrier and ruff. The Ramsar site shares the same designation features as the SAC and SPA in addition to being designated for its outstanding assemblages of rare plants and invertebrates including nine British Red Data Book plants and 136 British Red Data Book invertebrates. Ant Broads & Marshes SSSI is 7.29% unfavourable declining. Upper Thurne Broads & Marshes SSSI is 4.82% unfavourable no change and 14.57% unfavourable declining. Shallam Dyke Marshes Thurne SSSI is 95.56% unfavourable no change. Bure Broads & Marshes SSSI is 10.07% unfavourable no change. Upton Broad & Marshes SSSI is 0.72% unfavourable no change. Burgh Common and Muckfleet Marshes SSSI is 3.43% unfavourable no change. Trinity Broad SSSI is 12.54% unfavourable no change. Crostwick Marsh SSSI is 100% unfavourable no change. Yare Broads & Marshes SSSI is 47.27% unfavourable no change and 2.2% unfavourable declining. Halvergate Marshes SSSI is 18.23% unfavourable no change.	Site consists of 28 individual SSSIs, spread across Norfolk

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website[27])	Summary of connectivity with the River Basin District
	Geldeston Meadows SSSI is 97.18% unfavourable no change and 2.82% unfavourable declining. Sprat's Water and Marshes, Carlton Colville SSSI is 0.33% unfavourable no change. The other SSSIs are in favourable or unfavourable recovering condition.	
Dersingham Bog Ramsar/Roydon Common Ramsar/ Roydon Common & Dersingham Bog SAC	Wet heath, dry heath, depressions on peat substrates of the Rhynchosporion. Roydon Common is 4.56% unfavourable declining. Dersingham Bog is 100% favourable or unfavourable recovering.	Located within Norfolk and hydrologically sensitive particularly for its bog depressions and wet heathland
Baston Fen SAC	Spined loach. Relevant underlying SSSI management unit classified as unfavourable recovering.	The only hydrologically sensitive freshwater site in Lincolnshire. From review of the Site Improvement Plan this SAC is not subject to adverse hydrology but desilting of the ditch is required provided this can be done without harming the spined loach population

Table 3. Coastal European sites within 10km of the Anglian River Basin District and that are potentially linked to local flood risk management measures

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website[28])	Summary of connectivity with the River Basin District
Breydon Water SPA/Ramsar	Breeding common tern, non-breeding Bewick swan, avocet, golden plover, lapwing and ruff. Also designated for its waterbird assemblage. Breydon Water SSSI is 100% favourable condition, Halvergate Marshes SSSI is 18.23% unfavourable no change.	This site is an inland tidal estuary at the mouth of the River Yare and its confluence with the Rivers Bure and Waveney and an adjacent area of drained floodplain. It has extensive areas of mudflats that are exposed at low tide and these form the only tidal flats on the east coast of Norfolk.

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website[28])	Summary of connectivity with the River Basin District
The Wash SPA/Ramsar, The Wash & North Norfolk Coast SAC/North Norfolk Coast SPA	The SAC is designated for subtidal sandbanks, intertidal mudflats and sandflats, coastal lagoons, large shallow inlets and bays, reefs, *Salicornia* and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand, Atlantic salt meadows (Glauco-Puccinellietalia maritimae), Mediterranean saltmarsh scrub, otter and common seal The Wash SPA is designated for breeding little and common tern and non-breeding Bewick's swan, pink-footed goose, dark-bellied brent goose, common shelduck, wigeon, gadwall, pintail, common scoter, goldeneye, oystercatcher, grey plover, red knot, sanderling, dunlin, black-tailed godwit, bar-tailed godwit, curlew, redshank and turnstone. It is also designated for its waterbird assemblage. The North Norfolk Coast SPA is designated for breeding bittern, marsh harrier, Montagu's harrier, avocet, sandwich tern, common tern and little tern and for its non-breeding pink footed goose, dark bellied brent goose, wigeon and knot. It is also designated for its waterbird assemblage. The Ramsar site is designated for essentially the same features as the SAC and SPA. The Wash SSSI is 0.41% unfavourable declining but is otherwise favourable or recovering. North Norfolk Coast SSSI is 100% favourable or recovering.	Abuts and partly covers the coasts of Lincolnshire and north Norfolk
Greater Wash SPA	The SPA is designated to protect the foraging habitat of nearby sandwich tern, little tern and common tern colonies and to protect marine habitat of non-breeding red throated diver, common scoter and little gull.	Site covers the entire Lincolnshire, Norfolk and Suffolk coast down nearly to Felixstowe

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website[28])	Summary of connectivity with the River Basin District
Overstrand Cliffs SAC	Vegetated sea cliffs. SSSI is in favourable condition.	Not hydrologically sensitive but could be affected by coastal defence works.
Great Yarmouth North Denes SPA/Winterton-Horsey Dunes SAC	The SPA is designated for breeding little tern. The SAC is designated for Atlantic decalcified fixed dunes, humid dune slacks, embryonic shifting dunes and shifting dunes along the shoreline with *Ammophila arenaria.* 22.2% of the SSSI is in unfavourable no change condition.	The humid dune slacks are somewhat hydrologically sensitive and the site could be affected by coastal defence works.
Benacre to Easton Bavents Lagoons SAC/Benacre to Easton Bavents SPA/Ramsar	The SAC is designated for coastal lagoons. The SPA is designated for breeding bittern, marsh harrier and little tern. 8.73% of the SSSI is in unfavourable no change condition, 3.11% is in unfavourable declining condition and 0.45% is classed as partially destroyed.	Hydrologically sensitive, located on the Suffolk coast and could be affected by coastal defence works.
Minsmere to Walberswick Heaths & Marshes SAC/SPA	The SAC is designated for annual vegetation of drift lines, dry heathland and perennial vegetation of stony banks. The SPA is designated for: breeding bittern, marsh harrier, avocet, little tern, nightjar, gadwall, teal and shoveler, and non-breeding hen harrier, white-fronted goose, gadwall and shoveler. 3.42% of the SSSI is unfavourable no change, 0.11% is unfavourable declining, 0.13% partially destroyed and 0.36% destroyed.	Hydrologically sensitive and located on the Suffolk coast.

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website[28])	Summary of connectivity with the River Basin District
Alde-Ore & Butley Estuaries SAC/SPA/Ramsar, Orfordness-Shingle Street SAC	Alde-Ore & Butley Estuaries SAC is designated for estuaries, intertidal mudflats/sandflats and Atlantic salt meadows. Orfordness-Shingle Street SAC is designated for coastal lagoons, annual vegetation of drift lines and perennial vegetation of stony banks. The SPA is designated for breeding marsh harrier, avocet, sandwich tern, little tern and lesser black-backed gull and non-breeding avocet and redshank. It is also designated for its waterbird assemblage. 17.59% of the SSSI is unfavourable no change.	Hydrologically sensitive and located on the Suffolk coast.
Hamford Water SAC/SPA/Ramsar	SAC is designated for Fisher's estuarine moth. SPA is designated for breeding little tern and non-breeding dark-bellied brent goose, shelduck, teal, avocet, ringed plover, grey plover, black-tailed godwit and redshank. The underlying SSSI is 100% favourable or unfavourable recovering.	Hydrologically sensitive coastal site in Essex
Essex Estuaries SAC	Estuaries, intertidal mudflats and sandflats, subtidal sandbanks, Salicornia and other annuals colonizing mud and sand, *Spartina* swards, Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*). The condition of the underlying SSSIs is discussed for each overlapping SPA below.	Hydrologically sensitive coastal site in Essex
Colne Estuary SPA/Ramsar	Breeding pochard, ringed plover and little tern and non-breeding brent goose, hen harrier and redshank. Also waterbird assemblage. Underlying SSSI is 0.18% unfavourable declining with the remainder either favourable or recovering.	Hydrologically sensitive coastal site in Essex

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website[28])	Summary of connectivity with the River Basin District
Blackwater Estuary SPA/Ramsar	Breeding pochard, ringed plover and little tern and non-breeding brent goose, hen harrier, grey plover, dunlin and black-tailed godwit. Also waterbird assemblage. Underlying SSSI is 1.52% unfavourable declining and 0.04% partially destroyed, with the remainder either favourable or recovering.	Hydrologically sensitive coastal site in Essex
Dengie SPA/Ramsar	Non-breeding brent goose, hen harrier, grey plover and knot. Also waterbird assemblage. Underlying SSSI is 62.77% unfavourable declining, with the remainder either favourable or recovering.	Hydrologically sensitive coastal site in Essex
Foulness SPA/Ramsar	Breeding avocet, ringed plover, sandwich tern, common tern and little tern and non-breeding dark-bellied brent goose, hen harrier, oystercatcher, grey plover, knot, bar-tailed godwit and redshank. Also waterbird assemblage. Underlying SSSI is 2.7% unfavourable declining and 0.02% unfavourable no change, with the remainder either favourable or recovering.	Hydrologically sensitive coastal site in Essex
Crouch & Roach Estuaries SPA/Ramsar	Non-breeding brent goose and waterbird assemblage. Underlying SSSI is 0.63% unfavourable no change, with the remainder either favourable or recovering.	Hydrologically sensitive coastal site in Essex
Benfleet & Southend Marshes SPA/Ramsar	Non-breeding dark-bellied brent goose, ringed plover, grey plover, knot and dunlin. Also waterbird assemblage. Underlying SSSI is 7.74% unfavourable no change, with the remainder either favourable or recovering.	Hydrologically sensitive coastal site in Essex

Site name	Qualifying feature(s) (and latest assessed condition taken from Natural England SSSI search website[28])	Summary of connectivity with the River Basin District
Thames Estuary & Marshes SPA/Ramsar	Non-breeding hen harrier, avocet, ringed plover, grey plover, knot, dunlin, black-tailed godwit and redshank. Also waterbird assemblage. Underlying SSSI in Essex (Mucking Flats & Marshes) is favourable/recovering.	Hydrologically sensitive coastal site mainly in Kent (and thus outside the Anglian region) but partly in Essex
Outer Thames Estuary SPA	Designated to protect the foraging habitat of breeding common tern and little tern nesting in adjacent SPAs and for the marine habitat of non-breeding red throated diver.	Site covers the entire Essex coast
Abberton Reservoir SPA	Breeding cormorant and non-breeding great crested grebe, mute swan, wigeon, gadwall, teal, shoveler, pochard, tufted duck, goldeneye and coot. Also waterbird assemblage. Underlying SSSI is in favourable condition.	Hydrologically sensitive inland open water site.

4.37 Having identified the European sites within 10km that are likely to be hydrologically linked to flood risk management activities, consideration was next given to the potential impact sources from the FRMP at all stages and pathways to European sites (including those located at distances of more than 10km if there is connectivity) by which effects could arise on qualifying features.

4.38 Based on all possible impacts, pathways, and receptors, the Test of Likely Significant Effects for each measure in the FRMP is undertaken in the following tables.

Table 4. Screening table showing the Test of Likely Significant Effects results for Lead Local Flood Authority (LLFA) national measures contained within all Flood Risk Management Plans

Lead Local Flood Authority (LLFA) National measures

Measure ID	Measure	Likely Significant Effects on European sites
0299999007	Act as a consultee for major planning applications in their area	No likely significant effect – This measure describes the role of LLFAs
0299999011	Designate third party flood risk assets and maintain a register of designated flood risk assets in their area	No likely significant effect – Designating assets and maintaining a register will not affect European sites
0299999003	Implement relevant government guidance on taking climate change into account where necessary for flood risk decision making in their area	No likely significant effect – Taking climate change into account will not affect European sites
0299999018	Investigate local flood events where appropriate and necessary in their area	No likely significant effect – Investigating local flood events will not affect European sites
0299999002	Maintain, keep under review, apply and monitor a local flood risk management strategy in their area	No likely significant effect – The production of a local flood risk management strategy will not itself affect European sites
0299999015	Plan flood risk management projects to achieve wider environmental benefits where appropriate in their area	No likely significant effect – Ensuring that flood risk projects achieve wider environmental benefits will not negatively affect European sites
0299999006	Provide information to inform spatial and infrastructure planning, development and regeneration in their area	No likely significant effect – The provision of information will not affect European sites
0299999013	Regulate the condition of, and third party activity on, ordinary watercourses and review new works on ordinary watercourses in their area	No likely significant effect – Regulating activities and works will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0299999004	Start implementing steps to work towards net zero carbon in their area	No likely significant effect – Implementing net zero carbon will not affect European sites
0299999016	Support communities to increase their resilience to flooding in their area	No likely significant effect – Supporting communities to increase resilience to flooding will not affect European sites
0299999017	Support emergency response partners and communities to plan, prepare and exercise for future flood scenarios in their area	No likely significant effect – Supporting planning for emergency response to flooding will not affect European sites
0299999012	Take a risk based approach to develop and maintain a register of flood risk assets/features in their area	No likely significant effect – Maintaining a register of assets will not affect European sites
0299999005	Work in partnership with other risk management authorities to reduce the risk of flooding from all sources in their area	No likely significant effect – This is a wide-ranging measure and the details include that by 2027, risk management authorities will have developed and/or delivered a programme of flood risk management capital schemes and/or maintenance to reduce risk of flooding and coastal change and its adverse consequences for human health and wellbeing. Individual capital schemes may have an effect on European sites depending on what and where they are and how they are to be delivered. However, developing a programme of capital schemes will not itself lead to likely significant effects on European sites. Any individual capital schemes will need to be subject to HRA before being consented, in order to comply with legislation.
0299999009	Work with other flood asset owners and riparian landowners to raise awareness of, and where necessary enforce, maintenance responsibilities in their area	No likely significant effect – specific maintenance measures could have an adverse effect on European sites (although they are unlikely to be approved measures if so) but a requirement to raise awareness of, and enforce where required, necessary flood asset maintenance will not adversely affect European sites.
0299999010	Work with other risk management authorities to identify a programme of nature based approaches in their area	No likely significant effect – working with other authorities to identify a programme of nature-based approaches will not adversely affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0299999008	Work with other risk management authorities to provide information where necessary to update flood maps in their area	No likely significant effect – providing information will not adversely affect European sites.
0299999014	Work with other risk management authorities to support the delivery of flood projects in their area	No likely significant effect – providing support to other authorities will not adversely affect European sites.
0299999019	Work with others to support communities through the recovery phase of a significant flood event in their area	No likely significant effect – supporting communities will not adversely affect European sites.

Table 5. Screening table showing the Test of Likely Significant Effects results for Environment Agency national measures contained within all Flood Risk Management Plans

Measure ID	Measure	Likely Significant Effects on European sites
0299999041	Continue to review flood events to improve and develop flood services in England	No likely significant effect – reviewing flood events will not adversely affect European sites.
0299999025	Designate flood risk assets where necessary in England	No likely significant effect – designating flood risk assets will not adversely affect European sites.
0299999046	Drive down carbon emissions and deliver the required flood risk management outcomes when planning and carrying out flood risk management works in England	No likely significant effect – driving down carbon emissions will not adversely affect European sites.
0299999030	In its strategic overview role, work with risk management authorities, including facilitating effective partnerships in local places in England	No likely significant effect – working with risk management authorities will not adversely affect European sites.
0299999044	Invest in flood risk management projects to contribute to improving the natural, built and historic environments	No likely significant effect – investing in projects will not adversely affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0299999035	Issue and maintain guidance on taking climate change into account for flood risk decision making in England	No likely significant effect – issuing guidance will not adversely affect European sites.
0299999026	Maintain and update a database of its flood risk assets in England	No likely significant effect – maintaining a database will not adversely affect European sites.
0299999020	Monitor weather, tidal, rainfall and river conditions to provide flood forecasts in England	No likely significant effect – monitoring will not adversely affect European sites.
0299999042	Plan all flood risk management projects in England to achieve biodiversity net gain and wider environmental benefits	No likely significant effect – planning for biodiversity net gain will not adversely affect European sites.
0299999043	Plan all flood risk management projects in England to help achieve river basin management plan objectives	No likely significant effect – this measure is about achieving the environmental objectives of river basin management plans. This will not adversely affect European sites.
0299999033	Provide quality and timely planning advice to help avoid inappropriate development in areas at risk of flooding in England	No likely significant effect – provision of planning advice will not adversely affect European sites.
0299999031	Regulate large, raised reservoirs in England	No likely significant effect – regulating reservoirs to reduce the risk of flooding from dam and reservoir failures will not adversely affect European sites.
0299999028	Regulate new works to main rivers and sea defences in England	No likely significant effect – regulating new works to reduce the likelihood of flooding will not adversely affect European sites.
0299999039	Respond to flood events and support other emergency responders in England	No likely significant effect – responding to flood events to reduce the consequences of flooding will not adversely affect European sites.
0299999040	Support communities to increase their resilience to flooding in England	No likely significant effect – supporting communities to help them increase their resilience will not adversely affect European sites.
0299999023	Take a risk based approach to inspect, maintain and operate assets in England	No likely significant effect – adopting a risk based approach will not adversely affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0299999027	Take targeted enforcement action where there are blockages or unpermitted structures in England	No likely significant effect – taking enforcement action regarding blockages or unpermitted structures will not adversely affect European sites.
0299999024	Understand the long term needs of its assets and plan for their whole life management in England	No likely significant effect – developing an understanding of long-term asset needs will not adversely affect European sites.
0299999045	Work with catchment partnerships, communities and other risk management authorities to maximise the use of nature based solutions in England	No likely significant effect – working to maximise the use of nature-based solutions rather than other methods of flood risk management will not adversely affect European sites.
0299999021	Work with emergency response partners to issue appropriate flood warnings in England	No likely significant effect – issuing flood warnings will not adversely affect European sites.
0299999022	Work with emergency response partners to plan, prepare and exercise for future flood scenarios in England	No likely significant effect – preparing for flood scenarios will not adversely affect European sites.
0299999032	Work with local planning authorities, developers and other place makers in England	No likely significant effect – working with other authorities to ensure all new development is resilient to flooding will not adversely affect European sites.
0299999029	Work with research partners and the wider scientific community in England	No likely significant effect – working with research partners into new approaches to reduce risk of flooding will not adversely affect European sites.
0299999036	Work with risk management authorities and other partners to implement the National Flood and Coastal Erosion Risk Management Strategy in England	No likely significant effect – individual proposals within the National Flood and Erosion Risk Management Strategy may pose likely significant effects to European sites but the Strategy has been subject to its own HRA. The measure concerns working with other authorities to implement the Strategy, which will not itself adversely affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0299999038	Work with risk management authorities to identify a programme of future flood risk management projects in England	No likely significant effect – a commitment to identify a programme of future projects will not adversely affect European sites. Individual schemes and projects may have an effect on European sites depending on what and where they are and how they are to be delivered. However, all schemes will need to be subject to HRA before being consented, in order to comply with legislation.
0299999034	Work with risk management authorities to maintain and update where necessary flood maps in England	No likely significant effect – maintaining and updating flood maps will not adversely affect European sites.
0299999037	Work with risk management authorities to support the delivery of flood risk management projects in England	No likely significant effect – supporting risk management authorities in delivering flood risk management projects will not itself adversely affect European sites. Individual schemes and projects may have an effect on European sites depending on what and where they are and how they are to be delivered. However, all schemes will need to be subject to HRA before being consented, in order to comply with legislation.

Table 6. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the River Basin District

Measure ID	Measure	Likely Significant Effects on European sites
0213405012	Apply a flood risk-based approach to maintenance planning programmes in Northamptonshire to reduce the risk of flooding from surface water.	No likely significant effect – maintenance of flood defences could have an effect on the Upper Nene Valley SPA and Ramsar site which is hydrologically connected to the River Nene. However, this particular measure relates to ensuring maintenance planning is driven by a flood-risk based approach, which will not in itself result in effect on European sites. All maintenance schemes will need to be subject to HRA before being consented, in order to comply with legislation.
0200905187	Conduct a pilot study, if viable, to trial new innovative green funding in the Anglian River Basin District	No likely significant effect – trialling new funding approaches will not affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0200905123	Consider the implications of any changes to Shoreline Management Plan policies resulting from the review of the plans and the transition to Epoch 2 in the Anglian River Basin District to ensure alignment between the Flood Risk Management Plan measures and Shoreline Management Plan actions in the Anglian River Basin District	No likely significant effect – Changes to SMP policies could result in likely significant effects on European sites depending on what those changes are. However, the SMP is subject to its own independent HRA process and this particular measure simply requires the flood risk management authorities to consider the implications of any SMP changes for the FRMP to ensure the two plans are in conformity with each other.
0200905178	Continue to investigate and, if viable, progress the community flood kits and Great Ouse property level resilience pilot projects in the Great Ouse catchment	No likely significant effect – there is no reason to believe that community flood kits and property level resilience measures (such as sandbags, self-closing airbricks, flood-resilient walls or flood doors) will affect European sites. Moreover, this measure states that any resilience measures would only be implemented 'if viable'. Impacts on European sites would be a key element in determining if such measures were viable.
0200905161	Continue to progress the Rain Gauge project in the Great Ouse catchment	No likely significant effect – there is no reason to believe that installing rain gauges will affect European sites.
0200905129	Continue to protect Anglian Water assets in and across the communities they serve	No likely significant effect, but down-the-line HRA required – depending on what would be involved, steps required to protect Anglian Water assets could have effects on European sites but this is considered unlikely since the protection measures will normally be installed at the assets themselves (e.g. by raising or otherwise protecting key machinery at Water Recycling Centres) rather than at European sites. Since Anglian Water is a competent authority, they will need to undertake an HRA for any proposals that could affect European sites before they are implemented. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0200905179	Continue to work with Risk Management Authorities and other partners to progress the Great Ouse Strategic Intervention Study in the Great Ouse catchment to understand how flood risk can be better managed now and adapted as the climate changes and the catchment faces significant economic growth, how managing flooding and water resources can be better aligned, and how working closer with natural processes can support sustainable growth, the local economy and environment	No likely significant effect – progressing a study to understand how flood risk can be better managed and adapted will not have an adverse effect on European sites.
0200905184	Continue working together to develop Innovative Resilience Fund bids and, if viable, progress the schemes proposed in the Great Ouse catchment	No likely significant effect, but down-the-line HRA required – depending on what would be involved, individual resilience schemes could have effects on European sites but this measure only identifies that such schemes will be implemented if viable (adversely affecting the integrity of a European site would make them inviable) and in any event this measure is primarily a commitment to develop IRF bids for funding. Until funding is secured it is impossible to know what measures might be taken forward. However, schemes will be subject to their own HRA as part of the down-the-line consenting process. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0213405008	Deliver a programme of local flood management schemes in Northamptonshire	No likely significant effect, but down-the-line HRA required – individual flood management schemes could have implications for Upper Nene Valley SPA and Ramsar site but this measure doesn’t commit to any particular schemes and is sufficiently broadly defined that it allows flexibility for a programme of schemes to be brought forward that would not negatively affect this or any other European sites. Specific schemes would be subject to their own HRAs before being consented. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0211805002	Deliver the key aims and objectives as outlined in the current Flood Risk & Water Management Strategy in Lincolnshire	No likely significant effect – the adopted Flood Risk & Water Management Strategy for Lincolnshire is subject to its own HRA process in accordance with legislation. Moreover, this measure does not detail or commit to particular measures but commits to delivering the 'aims and objectives' of the adopted FRWMS which allows for flexibility for a programme of schemes to be brought forward that would not negatively affect this or any other European sites. Specific schemes would be subject to their own HRAs before being consented.
0200905139	Develop a set of tactical asset management plans in East Anglia	No likely significant effect – A commitment to develop a set of management plans will not affect European sites.
0200905186	Develop innovative solutions to reduce and offset carbon emissions from the construction, maintenance, and operation of flood and coastal defences in the Anglian River Basin District	No likely significant effect – Developing carbon reduction and offsetting solutions will not affect European sites.
0200905135	Endeavour to increase coverage of flood defence breach and infrastructure failure hydraulic modelling in the River Great Ouse Catchment	No likely significant effect – A commitment to hydraulic modelling will not affect European sites.
0200905121	Establish a 'working together' group in the Anglian River Basin District	No likely significant effect – Establishing a working together group will not affect European sites.
0213405003	Explore opportunities to deliver natural flood management works with landowners through a landscape enterprise network model in Northamptonshire	No likely significant effect, but down-the-line HRA required – Exploring opportunities to deliver natural flood management will not affect European sites. Specific natural flood management initiatives would need to be subject to their own HRAs before being consented. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200905136	Have completed embankment raising on the Ouse Washes as part of the Section 10 works in the River Great Ouse Catchment	No likely significant effect – This measure is concerned with completing delivering of an ongoing project that has been subject to its own HRA before being approved and permitted.

Measure ID	Measure	Likely Significant Effects on European sites
0213405005	Investigate development of groundwater flood risk forecasting in Northamptonshire	No likely significant effect – An investigation into developing flood risk forecasting will not affect European sites.
0200905133	Investigate how potential future changes in climate change allowances can be considered in modelling projects in the River Great Ouse Catchment	No likely significant effect – An investigation into refining and improving modelling will not affect European sites.
0200905156	Investigate opportunities associated with carbon offsetting and biodiversity loss from development proposals in East Anglia to contribute towards flood risk management projects implementing nature based solutions	No likely significant effect – Investigating opportunities to incorporate land improvements for carbon offsetting or offsetting biodiversity loss due to development in flood risk management will not affect European sites. Any carbon offsetting or biodiversity offsetting would be delivered separately from this FRMP. The measure is concerned with looking at such opportunities strategically to deliver additional benefits in nature-based flood risk management.
0200905153	Lead a recovery cell to review and investigate the December 2020 flood event in East Anglia	No likely significant effect – An investigation into a flood event will not affect European sites.
0200905189	Manage and operate large, raised reservoirs in accordance with the Reservoirs Act in the Anglian River Basin District	No likely significant effect – regulating reservoirs to reduce the risk of flooding from dam and reservoir failures will not adversely affect European sites. Since this measure is concerned with regulation (rather than delivering or implementing any measures) it will not pose any likely significant effects to European sites.
0200905142	Set up multi-functional operational catchment meetings in East Anglia	No likely significant effect – Setting up meetings will not affect European sites.
0213405007	Undertake a county-wide programme of Property Flood Resilience in Northamptonshire	No likely significant effect – there is no reason to believe that property level resilience measures (such as sandbags, self-closing airbricks, flood-resilient walls or flood doors) will affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0200905134	Undertake projects to investigate the material composition of flood defence embankments in the River Great Ouse Catchment	No likely significant effect – Investigating the composition of flood defence embankments will not affect European sites as it will generally involve limited core sampling.
0200605032	Undertake refurbishment to and replacement of pumping stations (as required) in Norfolk and Suffolk	No likely significant effect – A commitment to a general programme of refurbishment and replacement of pumping stations as required will not affect European sites. Specific refurbishment or replacement projects might need to be subject to their own HRAs before being consented depending on where they are located in proximity to European sites and what works would be involved, but the measure in the FMRP does not commit to specific pumping stations (other than that they would be in Norfolk and/or Suffolk) or particular works.
0200905125	Use evidence from its tactical asset management plans in East Anglia to (where government funding is unlikely to be made available) work in partnership with others to continue maintenance or assess opportunities to deliver environmental benefits across East Anglia in the Anglian River Basin District.	No likely significant effect – A commitment to using evidence from the Environment Agency tactical asset management plans will not affect European sites. Maintenance of specific flood defences could have an effect on European sites but specific schemes are not committed to in the FRMP and individual schemes will need to be subject to HRA before being undertaken, in order to comply with legislation.
0200905130	Utilise information gathered from previous studies, including but not limited to Natural Flood Management pilot studies and priority heat maps to better inform projects in East Anglia to reduce the risk of flooding and contribute to the delivery of Water Framework Directive objectives in the Anglian River Basin District.	No likely significant effect – A commitment to using evidence from the Environment Agency tactical asset management plans will not affect European sites. Maintenance of specific flood defences could have an effect on European sites but specific schemes are not committed to in the FRMP and individual schemes will need to be subject to HRA before being undertaken, in order to comply with legislation.
0211805003	Utilise the Communities at Risk tool in Lincolnshire to identify communities at risk from surface water, groundwater and ordinary watercourses.	No likely significant effect – A commitment to use evidence from the Communities at Risk tool will not affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0200905140	Work in partnership with other Risk Management Authorities and consider previous flood events, prefeasibility studies and flood risk investigations in the Great Ouse catchment to develop a map showing hotspots of flooding and where there is opportunity to work in partnership to manage the risk of flooding from all sources across the Great Ouse catchment in the Anglian River Basin District.	No likely significant effect – Working in partnership to develop a map will not affect European sites.
0200905154	Work in partnership with other Risk Management Authorities to implement the recovery cell recommendations following the December 2020 flooding in East Anglia	No likely significant effect, but down-the-line HRA required – A general commitment to work in partnership to implement the recovery cell recommendations will not affect European sites. Individual recovery cell recommendations may have potential to affect European sites depending on what they involve, but the list of recommendations has not yet been finalised. In any event, since this concerns helping people and businesses recover more quickly after flooding, there is less potential for effects on European sites than would be the case with new flood defences. Each recommendation will need to be considered on its own merits once they are finalised and published, and if necessary be subject to a down-the-line HRA before being implemented, in accordance with legislation. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200905097	Work in partnership with other Risk Management Authorities to lead a flood warning exercise in communities with a flood group in the River Great Ouse catchment	No likely significant effect – Flood warning exercises will not affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0200905088	Work in partnership with the East West Rail company and other relevant partners to assess opportunities in the Great Ouse Catchment to reduce the risk of flooding through the development of the Bedford to Cambridge route of East West Rail, considering any other significant developments in parallel, and endeavour to implement viable options in the Anglian River Basin District.	No likely significant effect – The Bedford to Cambridge route of East West Rail will be subject to its own permitting and HRA processes and this measure is not a commitment to deliver East West Rail. This measure is a commitment to take the opportunity presented by East West Rail to reduce the risk of flooding. The measure does not identify what opportunities may exist as the purpose of the measure is to explore and assess such opportunities. Given the broad nature of the measure and the fact that it is primarily a commitment to explore and assess opportunities it is not considered to negatively affect European sites.
0200905138	Work together to develop and implement collaborative strategic plans in the Anglian River Basin District to create a combined vision and joint strategies for the future management of flood risk.	No likely significant effect, but down-the-line HRA required – A commitment to work together to develop and implement strategic plans will not affect European sites. Specific schemes identified in such plans could pose a likely significant effect once they are devised, but these will need to be subject to their own down-the-line HRA process before the plans are adopted or the schemes consented. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200905127	Work with Anglian Water and Lead Local Flood Authorities in East Anglia to install, where appropriate and feasible, property level resilience measures across East Anglia.	No likely significant effect – there is no reason to believe that community flood kits and property level resilience measures (such as sandbags, self-closing airbricks, flood-resilient walls or flood doors) will affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0200705062	Work with Catchment Partnerships and communities in Essex, Norfolk, and Suffolk to develop projects that can help to reduce the risk of flooding and contribute to the delivery of environmental and water quality benefits in areas where previous assessment has shown that a capital scheme is unviable in the Anglian River Basin District.	No likely significant effect, but down-the-line HRA required – A commitment to work together to develop projects will not affect European sites. Specific projects, once devised, could pose a likely significant effect, but these will need to be subject to their own down-the-line HRA process before the plans are adopted or the schemes consented. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200905155	Work with Natural England and Local Authorities to seek opportunities in East Anglia to align flood risk management projects with the development of nature recovery networks to contribute to the improvement and connectivity of the natural environment and where appropriate achieve biodiversity and environmental net gain across East Anglia in the Anglian River Basin District.	No likely significant effect – A commitment to seeking opportunities to align flood risk management projects with nature recovery networks will not negatively affect European sites.
0200905131	Work with Natural England in East Anglia to develop long term strategies for adaptation, resilience, and connectivity of designated sites by fully integrating for plans for the water environment to support designated site objectives in the Anglian River Basin District.	No likely significant effect – A commitment to develop adaptation, resilience and connectivity strategies for designated sites will not negatively affect European sites.
0200905132	Work with developers to encourage rainwater harvesting through the creation of green spaces and recreation areas in East Anglia	No likely significant effect – Working with developers to encourage rainwater harvesting will not negatively affect European sites.
0200905188	Work with other Risk Management Authorities to improve learning, development and training opportunities for those involved in flood risk management in the Anglian River Basin District	No likely significant effect – Improving learning and training opportunities will not negatively affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0200905143	Work with owners of critical infrastructure at risk of flooding, such as electricity substations, major roads and railways in East Anglia to ensure that they are aware of the flood risk and have measures in place to mitigate the impacts of flooding across East Anglia, in the Anglian River Basin District.	No likely significant effect – depending on what would be involved, steps required to protect critical infrastructure could have effects on European sites. No specific proposals are identified because this measure is simply a commitment to work with infrastructure owners to ensure they understand the risks and are developing measures to mitigate them. It will then be for the individual infrastructure owners to develop any mitigation measures and undertake an HRA for any proposals that could affect European sites before they are implemented.
0200905128	Work with risk management authorities and Water Resources East in East Anglia to manage water holistically to achieve a greater level of resilience to both floods and droughts in the Anglian River Basin District.	No likely significant effect – A commitment to work to manage water holistically will not result in likely significant effects on European sites. Once detailed proposals for exactly how to manage water holistically have been devised, some may require their own HRA to ensure European sites are protected but ensuring that there is no negative effect on European sites will be an implicit element of managing water holistically.
0213405002	Work with the Northamptonshire Local Nature Partnership and Nature Improvement Area to create a natural capital investment plan in Northamptonshire	No likely significant effect – A commitment to develop an investment plan will not negatively affect European sites.

Table 7. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable within the Witham Management Catchment

Measure ID	Measure	Likely Significant Effects on European sites
0202305021	Collaborate with partner organisations, to research and monitor the impact of flood plain reconnection schemes on sediment and water flows, in the Lower and Upper Witham	No likely significant effect – A commitment to monitor will not negatively affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0202305022	Engage with landowners and partner organisations to identify appropriate opportunities for flood bank re-alignment, and novel approaches to flood plain reconnection in the Witham Catchment	No likely significant effect, but down-the-line HRA required – A commitment to collaborate in order to identify appropriate opportunities will not negatively affect European sites. Specific initiatives that come out of this collaboration, once devised, could pose a likely significant effect, but these will need to be subject to their own down-the-line HRA process before the schemes are consented. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0202305005	Play a key role working with partners through the South Lincolnshire Water Partnership in the South Forty Foot Catchment to create an Integrated Water Management Plan	No likely significant effect, but down-the-line HRA required – A commitment to develop an Integrated Water Management Plan will not negatively affect European sites. Specific proposals that come out of the plan, once devised, could pose a likely significant effect, but these will need to be subject to their own down-the-line HRA process before the schemes are consented. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0202305003	Progress the Lower Witham Flood Resilience Project to establish a programme to improve and sustain work in the Lower Witham catchment to create a resilient catchment with space for flood water to flow without harm, awareness of flood risk and riparian responsibilities increased within the community, improved catchment understanding on resilience during extreme floods, sustain and improve critical assets and remove or make safe non-critical assets, work with land managers and partners to achieve a long term solution, establish a clear and transparent maintenance regime that is affordable, sustainable and practical, and to improve catchment data in the Witham Management Catchment.	No likely significant effect – There are no European sites within the area to which the Lower Witham Flood Resilience Project will apply and the proposals to create a resilient catchment with space for flood water to flow without harm will not affect the European sites downstream of the River Witham, The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC.

Measure ID	Measure	Likely Significant Effects on European sites
0202305004	Progress the River Slea Flood Resilience Project to establish a programme of river restoration and flood risk improvement in Sleaford and surrounding areas to create a catchment resilient to climate change that can cope with drought and high flows, improve awareness within the community and partners of the need for a drought and flood resilient river corridor, sustain/improve critical assets and remove/make safe/transfer non-critical assets restoring a more natural river channel and flows where possible, work with community, land managers and partners to achieve a more self-sustaining and affordable long term solution, establish a clear and transparent maintenance regime that is affordable, sustainable and practical and improve catchment data in the Witham Management Catchment.	No likely significant effect – There are no European sites within the area to which the River Slea Flood Resilience Project will apply and the proposals to create a resilient catchment with space for flood water to flow without harm will not affect the European sites downstream of the River Slea, The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC.
0202105010	Progress the delivery of the first phase in the Saltfleet to Gibraltar Point Strategy area to focus on beach management, and further develop plans for introducing structures, completion of the relevant environmental assessments, and obtaining the required permissions and consents.	No likely significant effect – The Saltfleet to Gibraltar Point Coastal Strategy was subject to its own HRA and this has confirmed any mitigation needed to avoid adverse effects on the integrity of European sites or identified any need for compensation for those impacts where adverse effects on integrity cannot be avoided or mitigated but an Imperative Reasons of Overriding Public Interest/No Alternatives justification can be made, with compensation being/to be delivered in the form of the Habitat Compensation Programme. This measure in the FRMP is simply a commitment to progress with the adopted strategy and therefore no likely significant effects will arise from including the measure in the FRMP. This will include developing the specific schemes needed to implement the strategy which will be subject to their own HRAs once devised and before they are consented.
0202305016	Review the required maintenance for all main river systems, working with partners, communities and landowners in Witham Catchment to develop a sustainable maintenance regime.	No likely significant effect – A commitment to review requirement maintenance to develop a sustainable regime for the catchment will not result in adverse effects on European sites. To be sustainable a maintenance regime must by definition avoid causing harm to European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0202105011	Seek to review fluvial defences, including a review of tenancies of Environment Agency embankments, in the Steeping River catchment to ensure the quality of the water environment, and resilience of the fluvial defences, is maintained.	No likely significant effect – A commitment to review fluvial defences and Environment Agency embankment tenancies will not result in adverse effects on European sites. Moreover, there are no European sites within the area covered by this measure and ensuring the quality of the water environment and resilience of fluvial defences will not affect Gibraltar Point SPA/Ramsar or Saltfleetby-Theddlethorpe Dunes SAC at Gibraltar Point where the Steeping River drains to sea.
0202305002	Undertake a programme of monitoring and evaluation of the natural flood management scheme in Swaton to indicate the extent that the project has reduced flood risk to homes, improved habitats and increased biodiversity, supported and developed partnership working with and between communities, and contributed to research and development in the Witham Management Catchment.	No likely significant effect – Monitoring of a scheme that has been delivered will not result in adverse effects on European sites.
0202305024	Work with the LRF to make continuous improvements to the Command and Control Structure and Multi-Agency Flood Plan in Witham Catchment, to ensure updates are in line with current guidance to reduce the consequences of flooding, by enabling communities to take effective action before, during and after a flood, and by minimising flood risk to critical local infrastructure in the Witham Management Catchment.	No likely significant effect – Improvements to Command and Control Structures and Multi-Agency Flood Plans to reflect current guidance will not result in adverse effects on European sites.

Table 8. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Welland Management Catchment

Measure ID	Measure	Likely Significant Effects on European sites
0202205027	Investigate opportunities to support Lincs Wildlife Trust to develop a project at Bourne North Fen Wetland in Welland Catchment, to maximise opportunities to improve biodiversity, water quality, water resource and offer flood risk benefits.	No likely significant effect – Rutland Water SPA/Ramsar, Barnack Hills & Holes SAC and Grimsthorpe SAC all lie within the Welland Catchment. The SACs are both designated for well-drained calcareous grassland and are thus not hydrologically sensitive. Rutland Water is a major supply reservoir and is hydrologically sensitive. However, 'investigating opportunities' will not result in adverse effects on European sites since it is an essentially desk-based activity and any resulting scheme that negatively affected such sites would fail to achieve the objective of 'improving biodiversity'.
0202205022	Look to identify and prioritise specific communities at flood risk to engage within the Welland Catchment, to encourage sign up to the full flood warning service, and improve awareness of how to be prepared for flooding	No likely significant effect – Engaging with local communities will not result in adverse effects on European sites.
0202205028	Review the performance and progress appraisal of the Crowland and Cowbit Washes. This work will also support the Welland Rivers Trust in the Welland Catchment, to evaluate the future needs and uses of the Washes, upstream of Spalding, and identify opportunities to work with landowners to re-create wetland to improve biodiversity, water quality and provide flood risk benefit	No likely significant effect – Reviewing an appraisal is an essentially desk-based activity and will not result in adverse effects on European sites. Moreover, recreating wetlands to improve biodiversity is more likely to benefit the National Site Network that cause negative effects.

Measure ID	Measure	Likely Significant Effects on European sites
0202205007	Review the required maintenance for all main river systems, working with partners, communities and landowners in the Welland catchment	No likely significant effect, but down-the-line HRA required – Reviewing required maintenance is a desk-based activity and will not result in adverse effects on European sites. Any changes to required maintenance could pose a likely significant effect if they impacted Rutland Water SPA/Ramsar, but this seems unlikely given this measure relates to main river maintenance and will in any event need to be subject to its own down-the-line HRA process before any changes in maintenance are implemented. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0202205024	Work with landowners, communities and professional partners to identify opportunities for natural flood management schemes in the Welland Catchment, to reduce flood risk and maximise the benefits from the emerging environmental land management scheme	No likely significant effect, but down-the-line HRA required – Identifying opportunities for natural flood management (as opposed to artificial, engineered flood management) is environmentally positive and is a desk-based activity that will not result in adverse effects on European sites. Individual schemes could pose a likely significant effect if they impacted Rutland Water SPA/Ramsar, but this seems unlikely and any proposals would need to be subject to their own down-the-line HRA process before being consented and implemented. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0202205009	Work with partners to investigate options for delivery of a flood alleviation scheme for Paston Brook, in Peterborough, to reduce the risk of main river and surface water flooding	No likely significant effect, but down-the-line HRA required – Paston is in north-east Peterborough and Paston Brook presumably drains to the River Nene and thus is connected to the Nene Washes SPA/Ramsar site. However, there is no reason to consider that a flood alleviation scheme on the Paston Brook would affect flows in the River Nene and in any event this measure is a desk-based exercise to investigate options and will not result in adverse effects on European sites. Any individual scheme would need to be subject to its own down-the-line HRA process before being consented and implemented. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0202205020	Work with the LRF to make continuous improvements to the Command and Control Structure and Multi-Agency Flood Plan in Welland Catchment, to ensure updates are in line with current guidance to reduce the consequences of flooding, by enabling communities to take effective action before, during and after a flood, and by minimising flood risk to critical local infrastructure.	No likely significant effect – Improvements to Command and Control Structures and Multi-Agency Flood Plans to reflect current guidance will not result in adverse effects on European sites.

Table 9. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Suffolk East Management Catchment

Measure ID	Measure	Likely Significant Effects on European sites
0200605101	Continue the implementation of the Blyth Estuary Strategy in Southwold, Reydon, and Walberswick	No likely significant effect – Minsmere-Walberswick SPA/Ramsar and Minsmere to Walberswick Heaths and Marshes SAC both overlap with the area covered by this measure. However, the Blyth Estuary Coastal Strategy was subject to its own HRA and this has confirmed any mitigation needed to avoid adverse effects on the integrity of European sites or identified any need for compensation for those impacts where adverse effects on integrity cannot be avoided or mitigated but an Imperative Reasons of Overriding Public Interest/No Alternatives justification can be made, with compensation being/to be delivered in the form of the Habitat Compensation Programme. This measure in the FRMP is simply a commitment to continue with implementation of the adopted strategy and therefore no likely significant effects will arise from including the measure in the FRMP. This will include developing the specific schemes needed to implement the strategy which will be subject to their own HRAs once devised and before they are consented.
0200605093	Waveney, Lower Yare, and Lothingland IDB will continue to progress the Benacre and Kessingland flood risk management scheme in East Suffolk Management Catchment to reduce the risk of flooding.	No likely significant effect – Benacre to Eastern Bavents SPA and Benacre to Easton Bavents Lagoons SAC both overlap with the area covered by this measure. However, the Benacre and Kessingland flood risk management scheme is already being implemented and would have been subject to its own HRA. This measure in the FRMP is simply a commitment to continue with implementation of the consented scheme.

Measure ID	Measure	Likely Significant Effects on European sites
0200605089	Continue to work with East Suffolk Council (as lead authority) to implement the Lowestoft to Felixstowe Shoreline Management Plan action plan in the East Suffolk Management Catchment to reduce the risk of flooding and manage coastal change	No likely significant effect – A large number of European sites overlap with the area covered by this measure: Benacre to Eastern Bavents SPA, Benacre to Easton Bavents Lagoons SAC, Minsmere-Walberswick SPA/Ramsar, Minsmere to Walberswick Heaths and Marshes SAC, Sandlings SPA, Alde-Ore Estuary SPA/Ramsar, Alde-Ore & Butley Estuaries SAC, Orfordness-Shingle Street SAC and Deben Estuary SPA/Ramsar. However, the Lowestoft to Felixstowe SMP was subject to its own HRA and this confirmed any mitigation needed to avoid adverse effects on the integrity of European sites or identified any need for compensation for those impacts where adverse effects on integrity cannot be avoided or mitigated but an Imperative Reasons of Overriding Public Interest/No Alternatives justification can be made, with compensation being/to be delivered in the form of the Habitat Compensation Programme. This measure in the FRMP is simply a commitment to continue with implementation of the adopted SMP via implementation of the Action Plan and therefore no likely significant effects will arise from including the measure in the FRMP. This will include developing the specific coastal strategies and schemes needed to implement the SMP, which will be subject to their own HRAs once devised and before they are consented.
0200605087	Endeavour to update flood forecasting models in the East Suffolk Management Catchment to progress understanding of the impacts of fluvial events and improve the flood warning service	No likely significant effect – Updating flood forecasting models will not result in adverse effects on European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0200605090	Implement the Essex and South Suffolk Shoreline Management Plan action plan in the East Suffolk Management Catchment to reduce the risk of flooding and manage coastal change	No likely significant effect – The main European site overlapping with the area covered by this measure in East Suffolk is Stour & Orwell Estuaries SPA/Ramsar, with other European sites affected by the SMP being located in Essex down to Southend-on-Sea: Hamford Water SAC/SPA/Ramsar site, Essex Estuaries SAC, Colne Estuary SPA/Ramsar site, Blackwater Estuary SPA/Ramsar site, Dengie SPA/Ramsar site, Foulness SPA/Ramsar site, Crouch & Roach Estuaries SPA/Ramsar site, Benfleet & Southend Marshes SPA/Ramsar site and Outer Thames Estuary SPA. However, the Essex & South Suffolk SMP was subject to its own HRA and this confirmed any mitigation needed to avoid adverse effects on the integrity of European sites or identified any need for compensation for those impacts where adverse effects on integrity cannot be avoided or mitigated but an Imperative Reasons of Overriding Public Interest/No Alternatives justification can be made, with compensation being/to be delivered in the form of the Habitat Compensation Programme. This measure in the FRMP is simply a commitment to continue with implementation of the adopted SMP via implementation of the Action Plan and therefore no likely significant effects will arise from including the measure in the FRMP. This will include developing the specific coastal strategies and schemes needed to implement the SMP, which will be subject to their own HRAs once devised and before they are consented.

Measure ID	Measure	Likely Significant Effects on European sites
0200605053	Investigate the risk of flooding and use this evidence to inform potential measures to manage flood risk in Leiston	No likely significant effect, but down-the-line HRA required – A commitment to investigate the risk of flooding and then to use that evidence to devise potential measures to manage flood risk at Leiston will not result in adverse effects on European sites. Sandlings SPA lies c. 300m to the east of Leiston but is designated for its populations of nightjar and woodlark which are both species of free-draining soils and are not hydrologically sensitive. Further down-the-line HRA may be required before consent depending on the nature of any measures that fall out of the investigation, but that would in any event be a legal requirement and no measures have been devised at this point. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200605052	Investigate the risk of flooding and use this evidence to inform potential measures to manage flood risk in Needham Market and Wrentham	No likely significant effect, but down-the-line HRA required – A commitment to investigate the risk of flooding and then to use that evidence to devise potential measures to manage flood risk at Needham Market and Wrentham will not result in adverse effects on European sites. The nearest European site to Needham Market is c. 14km away (Stour & Orwell Estuaries SPA/Ramsar). Benacre to Easton Bavents Lagoons SAC and Benacre to Easton Bavents SPA/Ramsar site lie c. 800m to the east of Wrentham. There is no potential for a connection between flood risk at Wrentham and the lagoon habitat of the SAC. Two of the three species for which the SPA/Ramsar is designated (breeding bittern and marsh harrier) are sensitive to hydrological changes in their habitat. Further down-the-line HRA may be required before consent depending on the nature of any measures that fall out of the investigation, but that would in any event be a legal requirement and no measures have been devised at this point. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0200605088	Undertake a holistic review of flood risk and investigate flood risk management options in Stowmarket to reduce the risk of flooding, taking account of the role of existing upstream storage reservoirs on the River Gipping and the Rattlesden River, as well as opportunities to implement natural flood management measures	No likely significant effect – The nearest European site to Stowmarket is Stour & Orwell Estuaries SPA/Ramsar site c. 19km to the south-east. A commitment to undertake a flood risk review and investigate management options will not result in likely significant effects on European sites. Once detailed proposals for exactly how to manage water holistically have been devised, some may require their own HRA to ensure European sites are protected but ensuring that there is no negative effect on European sites will be an implicit element of managing water holistically.
0200605091	Work in partnership with the RSPB to implement nature based solutions that will provide opportunities to attenuate water on grazing marshes in the East Suffolk Management Catchment to reduce the risk of flooding and contribute to the delivery of Water Framework Directive objectives	No likely significant effect – this measure is not spatially-specific (other than referring to the East Suffolk Management Catchment) but implementing nature-based solutions to attenuate water on grazing marshes could be positive for European sites if done in conjunction with guidance from RSPB as such marshes depend on seasonal flooding and water levels in some marshes may drop as a result of climate change. That said, water standing to an excessive depth or for an excessive duration on grazing marshes can significantly impair their value for breeding and non-breeding birds. Therefore each case would need to be considered on its own merits.

Measure ID	Measure	Likely Significant Effects on European sites
0200605096	Work with East Suffolk IDB and the Alde and Ore Community Partnership to improve flood defences in Snape to reduce the risk of tidal flooding in the Alde and Ore Estuary.	No likely significant effect, but down-the-line HRA required – The Alde-Ore Estuary SPA/Ramsar site partly overlaps with the area around Snape to which this measure applies. However, the measure itself is simply a general commitment to improve flood defences in the settlement to reduce the risk of tidal flooding. Without further information in the FRMP as to what those improvements to flood defences might be, where they might be and how and when they are likely to be delivered (which will, by design, not be determined until a later tier in the planning and flood management process) it is impossible to undertake meaningful further assessment as the potential for impacts on the SPA/Ramsar site will be entirely dictated by those parameters. However, this also means that the measure, as expressed in the FRMP, is sufficiently broadly defined that it should be possible to devise a suite of flood defence improvements that will avoid significant effects on the SPA/Ramsar site. Moreover, it is understood that an Outline Business Case has been prepared over the past few years and is likely to be submitted imminently. Consultation with Natural England has been ongoing throughout the development of the business case for the Upper Estuary. An HRA report has been produced and Natural England has provided a 'letter of comfort' which states that '*that the proposal is likely to lead to an environmentally acceptable solution.*' Further down-the-line HRA will be required before consent is given for specific defence improvement measures, depending on their nature, but that would in any event be a legal requirement.

Measure ID	Measure	Likely Significant Effects on European sites
0200605055	Work with Natural England in the East Suffolk Management Catchment to develop a strategy for adaptation and resilience of estuarine designated sites by fully integrating plans for the water environment and supporting designated site and 25 Year Environment Plan objectives.	No likely significant effect – A commitment to develop a strategy will not result in likely significant effects on European sites, and the development of a strategy for adaptation and resilience of designated sites will be positive for European sites.
0200605095	Work with landowners in the East Suffolk Management Catchment to encourage the use of land management techniques and nature-based solutions (with support of partners) that will have multiple benefits to managing flood risk and pollution	No likely significant effect – A commitment to encourage land management techniques and nature based solutions will not result in likely significant effects on European sites and is very likely to be positive for European sites, such as through reducing phosphorus and/or nitrogen inputs.
0200605094	Work with water companies, landowners, Suffolk County Council, and IDBs (amongst others) in the East Suffolk Management Catchment to undertake habitat improvements, such as floodplain reconnection, in-channel work, and riparian tree planting, to reduce the risk of flooding and meet Water Framework Directive requirements	No likely significant effect – A commitment to undertake habitat improvements will not result in likely significant effects on European sites and is very likely to be positive for European sites such as improving resilience and the extent of functionally-linked land for SPAs and Ramsar sites.

Table 10. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Ouse Upper and Bedford Management Catchment

Measure ID	Measure	Likely Significant Effects on European sites
0200905075	Consider opportunities for natural flood management in Riseley Brook	No likely significant effect, but down-the-line HRA required – A commitment to consider opportunities will not result in likely significant effects on European sites. Moreover, the nearest European site is Upper Nene Valley Gravel Pits SPA/Ramsar site approximately 8km to the north-west and there is no clear connection between Riseley Brook and this SPA/Ramsar site. Further down-the-line HRA may be required before consent is given for specific natural flood risk management opportunities, depending on their nature, but that would in any event be a legal requirement. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200905074	Consider opportunities for natural flood management in the River Till to reduce the risk of flooding from all sources to Yelden, Upper Dean, and Lower Dean	No likely significant effect, but down-the-line HRA required – A commitment to consider opportunities will not result in likely significant effects on European sites. Moreover, the nearest European site is Upper Nene Valley Gravel Pits SPA/Ramsar site approximately 5km to the north-west and there is no clear connection between any potential opportunities that might result from this study and this SPA/Ramsar site. Further down-the-line HRA may be required before consent is given for specific natural flood risk management opportunities, depending on their nature, but that would in any event be a legal requirement. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0200905192	Consider opportunities to implement natural flood management measures following development opportunities in Bedford Borough to reduce the risk of flooding from all sources	No likely significant effect, but down-the-line HRA required – A commitment to consider opportunities will not result in likely significant effects on European sites. Moreover, the nearest hydrologically sensitive European site is Upper Nene Valley Gravel Pits SPA/Ramsar site approximately 17km to the north-west of the nearest allocated housing or employment site in the Bedford Local Plan and there is no clear connection between any potential opportunities that might result from this study and this SPA/Ramsar site. Further down-the-line HRA may be required before consent is given for specific natural flood risk management opportunities, depending on their nature, but that would in any event be a legal requirement. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200905081	Consider opportunities, such as greywater recycling, rainwater harvesting, and use of Sustainable Drainage Systems, through planning applications in Milton Keynes to remove foul water from surface water systems where possible	No likely significant effect – A commitment to consider opportunities will not result in likely significant effects on European sites. Moreover, steps to separate foul water and surface water systems where possible will be positive for the environment and European sites, leading to improvements in water quality and flow volumes.
0200905076	Continue the Asset Performance and Capacity Assessment balancing lakes study in Milton Keynes to help the council plan future flood and water infrastructure needed for the growth of Milton Keynes up to 2050	No likely significant effect – Undertaking a study will not result in likely significant effects on European sites. Moreover, this study is already in progress.

Measure ID	Measure	Likely Significant Effects on European sites
0200905072	Continue to develop the natural flood management scheme in Kempston West to manage the risk of flooding in Kempston	No likely significant effect – This scheme is already being developed and is included in the FRMP for completeness. Moreover, the area covered by this measure is 20km from the nearest hydrologically sensitive European site (Upper Nene Valley Gravel Pits SPA/Ramsar site). It will not result in likely significant effects on European sites.
0200905164	Continue to investigate and, if viable, progress the flood alleviation schemes in Baldock and Hitchin, and the Hertfordshire county wide property level resilience pilot to manage the risk of surface water flooding	No likely significant effect – Undertaking an investigation will not result in likely significant effects on European sites and while the measure refers to progressing the schemes it clearly states this will only occur if they are viable. Potential for effects on European sites will be a key factor in determining viability. Moreover, the areas covered by this measure are located 22km from the nearest hydrologically sensitive European site (Lee Valley SPA/Ramsar site).
0200905080	Continue to investigate and, where funding is available, progress surface water flood risk studies and schemes in Ampthill, Clophill, Maulden, Flitwick, Aspley Guise, Blunham, Heron Road, Hornes End Road, Leighton Buzzard, Pix Brook and Rectory Lane to manage the risk of surface water flooding	No likely significant effect – Undertaking an investigation will not result in likely significant effects on European sites and while the measure refers to progressing the schemes the areas covered by this measure are located 26km from the nearest hydrologically sensitive European site (Upper Nene Valley Gravel Pits SPA/Ramsar site) at their closest.
0200905085	Continue to work with Bedford Group of Drainage Boards to investigate the source and pathways of flooding in Deanshanger to develop suitable measures to manage the risk of flooding from surface water and ordinary watercourses	No likely significant effect – Undertaking an investigation will not result in likely significant effects on European sites. Moreover, the area covered by this measure is located 19km from the nearest hydrologically sensitive European site (Upper Nene Valley Gravel Pits SPA/Ramsar site).
0200905082	Continue with and implement recommendations from the Blue and Green infrastructure strategy in Central Bedfordshire to consider integrated water management opportunities to reduce the risk of flooding from all sources	No likely significant effect – The area covered by this measure is located 25-26km from the nearest hydrologically sensitive European sites (Upper Nene Valley Gravel Pits SPA/Ramsar site and Lee Valley SPA/Ramsar site) and schemes to reduce flooding in Central Bedfordshire through integrated water management would pose no pathway of impact to those sites.

Measure ID	Measure	Likely Significant Effects on European sites
0200905083	Identify opportunities from the Nature Scape and Greenest City work for natural flood management in Milton Keynes to reduce the risk of flooding from all sources	No likely significant effect – Identifying opportunities will not result in likely significant effects on European sites. Moreover, the nearest sizeable settlement in Milton Keynes (Olney) is 9km from the nearest hydrologically sensitive European site (Upper Nene Valley Gravel Pits SPA/Ramsar site) and is not hydrologically connected to it.
0200905162	Investigate and, if viable, progress measures in Caldecotte to manage the risk of flooding	No likely significant effect – Undertaking an investigation will not result in likely significant effects on European sites and while the measure refers to progressing the schemes it clearly states this will only occur if they are viable. Potential for effects on European sites will be a key factor in determining viability. Moreover, Caldecotte is 26km from the nearest hydrologically sensitive European site (Upper Nene Valley Gravel Pits SPA/Ramsar site) and is not hydrologically connected to it.
0200905086	Investigate options to improve the flood warning service in flashy river catchments in the Bedford Ouse catchment to issue appropriate flood warnings to reduce the consequences of river flooding	No likely significant effect – Investigating options to improve a flood warning service will not result in likely significant effects on European sites.
0200905071	Investigate whether modifications can be made to Brampton New Weir gauging station in Brampton to enable improved fish passage upstream to Alconbury Brook	No likely significant effect – Investigating whether modifications can be made to a gauging station will not result in likely significant effects on European sites and improving fish passage would be ecologically positive.
0200905089	Provide evidence and advice to HS2 in the Upper Ouse catchment to support them to take account of future flooding and coastal change in their infrastructure investment	No likely significant effect – Providing evidence and advice to a third party will not result in likely significant effects on European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0200905160	Review the flood risk and, if viable, progress flood risk management measures in Fenstanton to reduce the risk of flooding	No likely significant effect – Reviewing flood risk will not result in likely significant effects on European sites and while the measure refers to progressing management measures it clearly states this will only occur if they are viable. Potential for effects on European sites will be a key factor in determining viability. Moreover, Fenstanton is 7km from the nearest hydrologically sensitive European site (Portholme SAC) and is not hydrologically connected to it.
0200905159	Undertake capital maintenance work as identified on the capital programme to floodgates, sluices, embankments and pumping stations in the Bedford Ouse catchment to maintain the existing flood risk standard of service and to manage the risk of flooding	No likely significant effect, but down-the-line HRA required – The map accompanying this measure identifies eight specific locations of floodgates, sluices, embankments and pumping stations for capital maintenance at St Ives (three locations), Houghton, Bedford, Turvey, Buckingham and Towcester. The closest of these by far to European sites are those at Houghton and St Ives. These are 4-6km from the nearest hydrologically sensitive European site (Portholme SAC) and are downstream of that site. The eastern-most St Ives area scheme (opposite the RSPB's Hanson Ouse Fen nature reserve) is 3.5km upstream of the Ouse Washes SAC/SPA and Ramsar site. As the work is maintenance work there would not be any operational impacts to the site designations as existing flows would be maintained. Any proposals would require down-the-line HRA to accompany the Outline Business Case for a capital grant. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0200905087	Work in partnership with Highways England to assess opportunities in St Neots to reduce the risk of flooding through the development of the A428 Black Cat to Caxton Gibbet scheme, and endeavour to implement viable options	No likely significant effect – Assessing opportunities will not result in likely significant effects on European sites. Using the development of the A248 Black Cat to Caxton Gibbet scheme (which is currently going through Development Consent Order examination by The Planning Inspectorate, including consideration of effects on European sites) to secure opportunities for reducing flood risk will also not affect European sites, particularly since St Neots is 9km from the nearest hydrologically sensitive European site (Portholme SAC) and the Environmental Assessment for the Black Cat to Caxton Gibbet DCO does not identify any impacts of the highways scheme on this European site.
0200905084	Work in partnership with other Risk Management Authorities to establish a network of river wardens in known flood risk hotspots in the Bedford Ouse catchment to reduce the consequences of flooding from all sources and improve flood data collection	No likely significant effect – Establishing a network of river wardens will not affect European sites.
0200905079	Work with other partners to consider developing natural flood management schemes in the River Great Ouse (near Brackley, and Buckingham), River Ivel, River Tove, Ellington Brook, Upper Ouzel, and River Kym to deliver a variety of integrated flood risk, water quality and environmental benefits	No likely significant effect – A commitment to consider developing schemes will not result in likely significant effects on European sites. Moreover, the locations identified in this measure are remote from European sites being c. 18km from the nearest at their closest. In addition, natural (as opposed to artificial, engineered flood management) is environmentally positive.
0200905078	Work with partner organisations to consider future maintenance procedures for strategic flood risk infrastructure in Milton Keynes to take account of the impacts of climate change	No likely significant effect – A commitment to consider future maintenance procedures will not result in likely significant effects on European sites. Moreover, the nearest sizeable settlement in Milton Keynes (Olney) is 9km from the nearest hydrologically sensitive European site (Upper Nene Valley Gravel Pits SPA/Ramsar site) and is not hydrologically connected to it.

Table 11. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the North-West Norfolk Management Catchment

Measure ID	Measure	Likely Significant Effects on European sites
0200905190	Carry out a flood investigation in Clenchwarton to manage the risk of flooding	No likely significant effect – Carrying out an investigation will not affect European sites. Moreover, Clenchwarton is 3.3km from the nearest European site, The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC and flood risk management at Clenchwarton would not materially affect flows into The Wash.
0200905105	Carry out a review of the Wash East Coastal Management Strategy along the coast in between Heacham and Snettisham to consider whether new climate change projections and the Shoreline Management Plan review affect the original strategy policies and recommendations and to set out an adaptive pathway approach to manage the risk of sea flooding	No likely significant effect – This is simply a commitment to review the adopted Coastal Strategy to consider whether any changes need making, which is a standard activity and will not affect European sites. Any revisions to the Strategy which might stem from that review would potentially have likely significant effects on European sites given that The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC are adjacent to this entire coastline, but that would be picked up through the statutory Coastal Strategy HRA process.
0200905119	Consider opportunities along the coast in between Heacham and Snettisham to align flood risk management activities with the rewilding project at Ken Hill as part of the review of the Wash East Coastal Management Strategy	No likely significant effect – taking the opportunity to align flood risk management opportunities with the Ken Hill rewilding project would not have a negative effect on European sites and could be beneficial for wintering waterfowl and waders.
0200905173	Continue to progress, if viable, the property level resilience project (phase 2) in West Norfolk to manage the risk of surface water flooding	No likely significant effect – there is no reason to believe that property level resilience measures (such as sandbags, self-closing airbricks, flood-resilient walls or flood doors) will affect European sites. Moreover, this refers to the continuation of an ongoing project rather than anything new.

Measure ID	Measure	Likely Significant Effects on European sites
0200905107	Continue to renew temporary planning permission (where evidence demonstrates that this is sustainable) for beach huts and caravans along the coast in between Heacham and Snettisham to ensure that new development is safe and resilient to flooding and supports the recommendations of the current Wash East Coastal Management Strategy and Local Plan policy	No likely significant effect – beach huts and caravans along the coast between Heacham and Snettisham could affect European sites (The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC) if they required a section of frontage to be defended when it would not otherwise require defending, as this would exacerbate coastal squeeze (the loss of intertidal habitats as they are inundated due to rising sea levels but unable to retreat inland due to hard flood defences). However, the defence policy (Hold the Line, Managed Realignment etc.) is determined by the Wash East Coastal Strategy (which has been subject to its own HRA) rather than by the FRMP, and this measure explicitly states that any decision to renew temporary planning permission will be based on it supporting the Coastal Strategy. Moreover, the measure also states that temporary planning permissions would only be renewed where evidence demonstrates this is sustainable. A planning permission renewal that led to adverse effects on the integrity of European sites would be inherently unsustainable. This measure does not commit to the renewal of any specific temporary planning consents. Individual decisions to renew planning permission would be subject to HRA as part of normal legal requirements associated with grant or renewal of planning consents.

Measure ID	Measure	Likely Significant Effects on European sites
0200905116	Implement The Wash (Gibraltar Point to Old Hunstanton) Shoreline Management Plan action plan along the coast in between Heacham and Snettisham to reduce the risk of flooding and manage coastal change	No likely significant effect – The Wash SPA/Ramsar site and The Wash & North Norfolk Coast SAC both overlap with the area covered by this measure. However, the Gibraltar Point to Old Hunstanton SMP was subject to its own HRA and this confirmed any mitigation needed to avoid adverse effects on the integrity of European sites or identified any need for compensation for those impacts where adverse effects on integrity cannot be avoided or mitigated but an Imperative Reasons of Overriding Public Interest/No Alternatives justification can be made, with compensation being/to be delivered in the form of the Habitat Compensation Programme. This measure in the FRMP is simply a commitment to implement the adopted SMP via implementation of the Action Plan and therefore no likely significant effects will arise from including the measure in the FRMP. This will include developing the specific coastal strategies and schemes needed to implement the SMP, which will be subject to their own HRAs once devised and before they are consented.
0200905113	Investigate opportunities to enhance telemetry, particularly actual water level recording along the coast in between Heacham and Snettisham to improve flood forecasting and warning	No likely significant effect – enhancing telemetry would not have a negative effect on European sites.
0200905111	Investigate options on the North Beach access road in between Heacham and Hunstanton to ensure that access and egress is maintained during a flood incident	No likely significant effect – Investigating options will not result in likely significant effects on European sites as it is a desk-based activity. Once options have been chosen these could have effects on The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC given their proximity to the North Beach access road. However, the measure does not commit to doing anything to the road and any proposals that did emerge from the investigation would be subject to their own HRA in line with legal requirements before being permitted.

Measure ID	Measure	Likely Significant Effects on European sites
0200905109	Investigate the condition of the earth embankment (second line of defence) and the outfalls within it in between Heacham and Snettisham to improve understanding of the resilience of the structures, better inform the Wash East Coastal management strategy review and future works	No likely significant effect – investigating the condition of the earth embankment and outfalls will not affect European sites as it will generally involve limited core sampling or visual inspection only.
0200905115	Investigate the scope to establish a flood group along the coast in between Heacham and Snettisham to help improve the resilience of the community to flooding and aid the recovery process following a flood incident	No likely significant effect – investigating the scope to establish a flood group will not affect European sites.
0200905106	Prepare to review the business case and associated legal agreement for the beach management work in between Heacham and Snettisham to implement the recommendations from the reviewed Wash East Coastal Management Strategy, in particular to consider any changes to the current policy	No likely significant effect – neither preparing to review a business case, or actually reviewing a business case or legal agreement will affect European sites. The recommendations of the Wash East Coastal Strategy may have likely significant effects on The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC but the review of the Coastal Strategy will be subject to its own HRA before it can be adopted, as will any schemes that come out of the Coastal Strategy before they can be consented.
0200905108	Prepare to review Kings Lynn & West Norfolk Local Plan policies for new development and renewal of temporary planning permission for beach huts and caravans in between Heacham and Snettisham to ensure it supports any policy changes recommended by the Wash East Coastal Management Strategy review	No likely significant effect –preparing to review a Local Plan will not affect European sites. Local Plans must be reviewed every five years in any event and are subject to their own HRA process before they can be adopted. Any policy changes arising from the Wash East Coastal Strategy may have likely significant effects but the review of the Coastal Strategy will be subject to its own HRA before it can be adopted, as will any schemes that come out of the Coastal Strategy before they can be consented.
0200905112	Review the flood warning trigger levels in relation to the condition of the flood defences along the coast in between Heacham and Snettisham to improve flood forecasting and warning	No likely significant effect – reviewing flood warning trigger levels would not have a negative effect on European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0200905118	Work with Highways England to investigate flood risk to the A149 and A47 in North-West Norfolk to identify potential measures to mitigate this risk and reduce the impact of flooding	No likely significant effect – investigating flood risk would not have a negative effect on European sites. It is also unlikely that measures to reduce the impact of flooding of these roads would have a significant effect on European sites but this would be investigated through a scheme-specific HRA once any schemes were identified.
0200905117	Work with local coastal communities to raise awareness of flooding, in particular to those residents who own a second home in between Heacham and Snettisham to reduce the consequences of flooding in coastal communities	No likely significant effect – raising awareness of flooding would not have a negative effect on European sites.
0200905104	Work with the Borough Council of King's Lynn and West Norfolk, Anglian Water, and the Community Interest Company to continue beach management work in between Heacham and Snettisham to manage the risks of sea flooding between Heacham and Snettisham	No likely significant effect – Ongoing beach nourishment activities require MMO licensing and therefore at a project level have undergone consultation and agreement with the MMO and Natural England. Moreover, the works were committed to as part of The Wash East Coastal Management Strategy which was subject to its own HRA before it was adopted.

Table 12. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the North Norfolk Rivers Management Catchment

Measure ID	Measure	Likely Significant Effects on European sites
0200605099	Continue to investigate flood risk in Weybourne to develop options to manage the risk of fluvial flooding in Weybourne	No likely significant effect, but down-the-line HRA required – investigating flood risk, and developing options to manage flood risk, would not have a negative effect on European sites. Individual options, once developed, may have effects on European sites depending on what they were to entail but these would be subject to their own down-the-line HRA process in accordance with legislation before they were consented. Although Weybourne is 1.5km south-east of The Wash SPA/Ramsar site and The Wash & North Norfolk Coast SAC it is not connected to either European site. It is approximately 400m south of the Greater Wash SPA but this SPA is designated primarily for its open water habitat which is used by red-throated diver, common scoter and little gull outside the breeding season and foraging (plunge diving) terns during the breeding season. Weybourne is not directly connected to the Greater Wash SPA or its interest features. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200605080	Work with North Norfolk District Council to undertake engagement with the Norfolk Flood Wardens Group in North Norfolk to maintain relationships with the group and enhance awareness of flood risk and preparedness for flood incidents	No likely significant effect – maintaining relations with flood wardens and enhancing awareness of flood risk will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0200605081	Implement the Hunstanton to Kelling Hard Shoreline Management Plan action plan in the North Norfolk Rivers Management Catchment to reduce the risk of flooding and manage coastal change	No likely significant effect – The Wash SPA/Ramsar site and The Wash & North Norfolk Coast SAC both overlap with the area covered by this measure. However, the Hunstanton to Kelling Hard SMP was subject to its own HRA and this confirmed any mitigation needed to avoid adverse effects on the integrity of European sites or identified any need for compensation for those impacts where adverse effects on integrity cannot be avoided or mitigated but an Imperative Reasons of Overriding Public Interest/No Alternatives justification can be made, with compensation being/to be delivered in the form of the Habitat Compensation Programme. This measure in the FRMP is simply a commitment to implement the adopted SMP via implementation of the Action Plan and therefore no likely significant effects will arise from including the measure in the FRMP. This will include developing the specific coastal strategies and schemes needed to implement the SMP, which will be subject to their own HRAs once devised and before they are consented.

Measure ID	Measure	Likely Significant Effects on European sites
0200605082	Implement the Kelling Hard to Lowestoft Shoreline Management Plan action plan in the North Norfolk Rivers Management Catchment to reduce the risk of flooding and manage coastal change	No likely significant effect – The Wash SPA/Ramsar site, The Wash & North Norfolk Coast SAC, Overstrand Cliffs SAC, Greater Wash SPA, Great Yarmouth North Denes SPA and Winterton-Horsey Dunes SAC all overlap with the area covered by this measure. However, the Kelling Hard to Lowestoft SMP was subject to its own HRA and this confirmed any mitigation needed to avoid adverse effects on the integrity of European sites or identified any need for compensation for those impacts where adverse effects on integrity cannot be avoided or mitigated but an Imperative Reasons of Overriding Public Interest/No Alternatives justification can be made, with compensation being/to be delivered in the form of the Habitat Compensation Programme. This measure in the FRMP is simply a commitment to implement the adopted SMP via implementation of the Action Plan and therefore no likely significant effects will arise from including the measure in the FRMP. This will include developing the specific coastal strategies and schemes needed to implement the SMP, which will be subject to their own HRAs once devised and before they are consented.
0200605084	Undertake work to consider the impact of climate change on coastal villages in North Norfolk to understand how flood risk will change in the future and consider measures to mitigate this	No likely significant effect, but down-the-line HRA required – considering the impact of climate change to understand changing flood risk will not affect European sites. Measures to mitigate changing flood risk could potentially pose likely significant effects depending on what they would entail and where they would be located but those will not be devised until after the investigation into the impact of climate change is completed. They will then be subject to their own down-the-line HRA process once they have been devised and before they are consented, in line with legal requirements. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0200605086	Work with Norfolk Rivers Trust on the Rivers Burn, Glaven, Mun, and Stiffkey in North Norfolk to consider opportunities to implement attenuation and natural flood management measures to reduce the risk of flooding and contribute to the delivery of Water Framework Directive objectives and wider environmental benefits	No likely significant effect – Considering opportunities will not affect European sites since it is a desk-based activity. In general implementing attenuation and natural flood risk management measures will be either neutral or beneficial to European sites. In any event, the FRMP does not commit to any specific initiatives and once they are devised they would need to be subject to their own HRA process in line with legal requirements before they are consented.
0200605085	Work with landowners in North Norfolk to encourage the use of land management techniques that will have multiple benefits to managing flood risk and pollution	No likely significant effect – A commitment to encourage land management techniques to manage flood risk and pollution will not result in likely significant effects on European sites and is very likely to be positive for European sites, such as through reducing phosphorus and/or nitrogen inputs.

Table 13. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Nene Management Catchment

Measure ID	Measure	Likely Significant Effects on European sites
0214005002	Deliver the key aims and objectives set out in the Peterborough Local Flood Risk Management Strategy in Peterborough	No likely significant effect – The Peterborough Local Flood Risk Management Strategy was subject to its own HRA and this has confirmed any mitigation needed to avoid adverse effects on the integrity of European sites. This measure in the FRMP is simply a commitment to progress with the adopted strategy. This will include developing the specific schemes needed to implement the strategy which will be subject to their own HRAs if necessary once devised and before they are consented.
0202205021	Look to identify and prioritise specific communities at flood risk to engage with in the Nene Catchment, to encourage sign up to the full flood warning service, and improve awareness of how to be prepared for flooding	No likely significant effect – identifying communities with which to engage will not result in effects on European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0202205008	Review the required maintenance for all main river systems, working with partners, communities and landowners in the Nene catchment to develop a sustainable maintenance regime to manage flood risk	No likely significant effect – reviewing required maintenance and developing a sustainable maintenance regime for all main river systems will not negatively affect European sites. On the contrary, sustainable maintenance regimes will be positive for European sites.
0202205030	Support the River Nene Restoration Project to deliver the Nene Backwater Restoration project between Northampton and Peterborough in the Nene Catchment to improve the WFD status, amenity value and provide flood risk benefit	No likely significant effect – the River Nene Restoration Project and its objective to improve WFD status of the River Nene will have neutral to positive effects on the Upper Nene Valley Gravel Pits SPA/Ramsar and the Nene Washes SAC and SPA/Ramsar, rather than adverse effects.
0202205031	Support the Wicksteed Charitable Trust to deliver a multi-beneficial project on 5 hectares of trust land in Kettering to improve water quality and amenity value, habitat quality, biodiversity and provide flood storage through flood plain reconnection	No likely significant effect – this measure simply involves supporting another organisation (Wicksteed Charitable Trust) but in any event the scheme described will improve habitat quality and biodiversity and thus be neutral to positive for the Upper Nene Valley Gravel Pits SPA/Ramsar site
0202205029	Support the delivery of projects with a focus on land management, river restoration and habitat biodiversity in the Nene flood plain, Pitsford, Lamport and Cottesbrooke, to improve the amenity value, WFD status and reduce flood risk through natural flood management	No likely significant effect – this measure involves supporting third parties, but in any event schemes to improve habitat biodiversity and improve WFD quality will be neutral to positive for the Upper Nene Valley Gravel Pits SPA/Ramsar site
0202205005	Work with landowners, communities and professional partners to identify opportunities for natural flood management schemes in the Nene Catchment, to reduce flood risk and maximise the benefits from the emerging environmental land management scheme	No likely significant effect – A commitment to encourage natural flood management schemes and land management techniques will not result in likely significant effects on European sites and is very likely to be positive for European sites, such as through reducing phosphorus and/or nitrogen inputs.
0202205019	Work with the LRF to make continuous improvements to the Command and Control Structure and Multi-Agency Flood Plan in the Nene Catchment, to ensure updates are in line with current guidance to reduce the consequences of flooding, by enabling communities to take effective action before, during and after a flood, and by minimising flood risk to critical local infrastructure	No likely significant effect – Improvements to Command and Control Structures and Multi-Agency Flood Plans to reflect current guidance will not result in adverse effects on European sites.

Table 14. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Essex Combined Management Catchment

Measure ID	Measure	Likely Significant Effects on European sites
0200705057	Assess options to continue the delivery of the flood alleviation scheme in Chelmsford to reduce the risk of fluvial flooding	No likely significant effect – assessing options will not affect European sites since it is a desk-based activity. Moreover, the flood alleviation scheme in Chelmsford is already underway and Chelmsford is 8km from the nearest European site.
0200705067	Continue to work in partnership with Blackwater Aggregates to progress a flood alleviation scheme in the catchment of the River Blackwater to reduce the risk of flooding in Coggeshall, Feering and Kelvedon	No likely significant effect – this is the continuation of a commitment provided in FRMP1. Moreover, the flood alleviation scheme in question is 7km from the nearest hydrologically sensitive European site (Abberton Reservoir SPA) at its closest and is not hydrologically connected to it.

Measure ID	Measure	Likely Significant Effects on European sites
0200705076	Implement the Essex and South Suffolk Shoreline Management Plan action plan in the Combined Essex Management Catchment to reduce the risk of flooding and manage coastal change	No likely significant effect – There are many European sites that lie within the area affected by the SMP to Southend-on-Sea: Stour & Orwell Estuaries SPA/Ramsar (in South Suffolk), Hamford Water SAC/SPA/Ramsar site, Essex Estuaries SAC, Colne Estuary SPA/Ramsar site, Blackwater Estuary SPA/Ramsar site, Dengie SPA/Ramsar site, Foulness SPA/Ramsar site, Crouch & Roach Estuaries SPA/Ramsar site, Benfleet & Southend Marshes SPA/Ramsar site and Outer Thames Estuary SPA. However, the Essex & South Suffolk SMP was subject to its own HRA and this confirmed any mitigation needed to avoid adverse effects on the integrity of European sites or identified any need for compensation for those impacts where adverse effects on integrity cannot be avoided or mitigated but an Imperative Reasons of Overriding Public Interest/No Alternatives justification can be made, with compensation being/to be delivered in the form of the Habitat Compensation Programme. This measure in the FRMP is simply a commitment to continue with implementation of the adopted SMP via implementation of the Action Plan and therefore no likely significant effects will arise from including the measure in the FRMP. This will include developing the specific coastal strategies and schemes needed to implement the SMP, which will be subject to their own HRAs once devised and before they are consented.
0200705065	Progress the flood alleviation scheme, including consideration to utilising nature based solutions, in Rawreth and Rawreth Shot to reduce the risk of fluvial and surface water flooding	No likely significant effect – this flood alleviation scheme is 2km upstream of the nearest European sites (Crouch & Roach Estuaries SPA/Ramsar site and Essex Estuaries SAC) but alleviating flooding in Rawreth and Rawreth Shot, particularly using nature-based solutions, would not adversely affect that SPA/Ramsar, noting that it is an offence to pollute watercourses irrespective of their designation status.

Measure ID	Measure	Likely Significant Effects on European sites
0200705059	Work in partnership with Essex County Council, Suffolk County Council, Thurrock Council, and Southend-on-Sea Borough Council in the Combined Essex management catchment to manage the risk of surface water flooding	No likely significant effect – individual flood management schemes could have implications for European sites in the Management Catchment (although it is noted that this measure is about surface water flooding rather than fluvial or tidal flooding) but this measure doesn't commit to any particular schemes and is sufficiently broadly defined that it allows flexibility for a programme of schemes to be brought forward that would not negatively affect any European sites. Specific schemes would be subject to their own HRAs as necessary before being consented.
0200705064	Work with Communities Prepared in Essex to undertake flood risk engagement work as part of wider emergency planning engagement, with the aim to help a broader range of communities understand and adapt to their risk of flooding	No likely significant effect – engagement work with local communities will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0200705066	Work with Essex County Council and Maldon District Council to deliver a flood alleviation scheme in Heybridge to reduce the risk of fluvial, tidal, and surface water flooding	No likely significant effect, but down-the-line HRA required – the area covered by this measure overlaps with the River Blackwater and the Blackwater Estuary SPA/Ramsar site and Essex Estuaries SAC. However, this measure doesn't commit to any particular schemes and is sufficiently broadly defined that it allows flexibility for a programme of schemes to be brought forward that would not negatively affect any European sites. The options are still being explored but It is understood that the leading option is likely to be a high flow diversionary channel via Bovis washland & Elms Farm Country Park, dependent on available funding. If that was chosen as the leading option it would be c. 700m from Blackwater Estuary SPA/Ramsar at its closest and entirely upstream of that SPA/Ramsar. Given the purpose is to alleviate flooding in Heybridge there should be no downstream effects on flows into the estuary. For the Outline Budget Case the scheme will require a down-the-line HRA in line with Environment Agency requirements. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0200705060	Work with Highways England in Essex to ensure that the A12 Chelmsford to A120 widening scheme is resilient to flooding and look for opportunities to reduce the risk of flooding and achieve environmental betterment	No likely significant effect, but down the line HRA required – the A12 between Chelmsford and the junction with the A120 lies 6.5km from the nearest hydrologically sensitive European site (Blackwater Estuary SPA/Ramsar site and Essex Estuaries SAC) at its closest and is not directly connected to it. Moreover, ensuring the A12 is designed to be resilient to flooding would not affect the SPA/Ramsar/SAC. Natural England have flagged in their review of this HRA report that the A12 intersects tributaries of the River Blackwater so risk of pollution would exist. However, this measure is not a commitment to deliver the widening scheme (as that is a Highways England initiative) it is a commitment to ensure such a scheme is designed to be resilient to flooding. Moreover, as noted in paragraph 3.17 of this report it is noting that it is an offence to pollute watercourses irrespective of their designation status so it can be reasonably assumed any scheme would give consideration to ensuring that it did not result in pollution. Nonetheless, in order to cover this further it is considered down-the-line HRA is required as part of the widening scheme.
0200705070	Work with Natural England, the RSPB, and other organisations in Essex to develop a long term strategy for adaptation and resilience of designated sites	No likely significant effect – A commitment to develop a strategy will not result in likely significant effects on European sites, and the development of a strategy for adaptation and resilience of designated sites will be positive for European sites.
0200705061	Work with Thurrock Borough Council, Southend-on-Sea Borough Council, and Suffolk County Council to engage with communities in Essex to help improve the uptake of property level resilience measures to reduce the risk of flooding	No likely significant effect – there is no reason to believe that property level resilience measures (such as sandbags, self-closing airbricks, flood-resilient walls or flood doors) will affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0200705078	Work with landowners and partners to implement natural flood management measures in the upper reaches of the River Brain and River Colne to reduce the risk of flooding in Witham and Great Yeldham, respectively, and deliver water quality and environmental benefits	No likely significant effect – Implementing natural flood management (as opposed to artificial, engineered flood management) is environmentally positive and will not result in adverse effects on European sites. Moreover, Great Yeldham is remote from European sites and Witham, while closer, is still 6.5km from the nearest European site (Blackwater Estuary SPA/Ramsar and Essex Estuaries SAC).
0200705071	Work with landowners in the Combined Essex Management Catchment to encourage the use of land management techniques that will have multiple benefits to managing flood risk and pollution	No likely significant effect – A commitment to encourage land management techniques and nature based solutions will not result in likely significant effects on European sites and is very likely to be positive for European sites, such as through reducing phosphorus and/or nitrogen inputs.
0200705072	Work with partners to carry out habitat improvement work in watercourses in the Combined Essex Management Catchment to reduce the risk of flooding and contribute to the delivery of Water Framework Directive objectives	No likely significant effect – A commitment to undertake habitat improvements and aid delivery of WFD objectives will not result in likely significant effects on European sites and is very likely to be positive for European sites such as improving resilience and the extent of functionally-linked land for SPAs and Ramsar sites.
0200705075	Work with partners to progress its ambitions for tree planting, with a focus on the upper reaches of watercourses in Essex to help reduce the risk of flooding	No likely significant effect – tree planting in the upper reaches of watercourses will not affect European sites in Essex in a negative manner

Table 15. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Cam and Ely Ouse Management Catchment

Measure ID	Measure	Likely Significant Effects on European sites
0200905102	Carry out a flood investigation in Attleborough to manage the risk of flooding from all sources	No likely significant effect – carrying out a flood investigation will not affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0200905091	Complete the flood investigation in Girton to understand flood risk from all sources and identify the most suitable options to manage the flood risk	No likely significant effect, but down-the-line HRA required – this concerns the completion of an ongoing largely desk-based activity and will not affect European sites. Once suitable options to manage flood risk have been identified they may need down-the-line HRA before they are consented, in order to comply with legislation, but Girton is 13.5km from the nearest hydrologically sensitive European site (Fenland SAC). In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200905094	Consider opportunities for attenuation (which may include natural flood management) in the River Linnet and River Lark to reduce the risk of flooding from all sources to Bury St Edmunds	No likely significant effect – considering opportunities will not have an effect on European sites. Moreover, Bury St Edmunds is 4.5km from the nearest hydrologically sensitive European site (Breckland SAC) and that SAC is not hydrologically dependent on the River Linnet or River Lark
0200905095	Consider opportunities for attenuation, including natural flood management in the River Cam and its tributaries to mitigate the impacts of flood water from several tributaries converging in Cambridge	No likely significant effect – considering opportunities will not have an effect on European sites. Moreover, Cambridge is 10km from the nearest hydrologically sensitive European site (Fenland SAC) and attenuation of flood water in Cambridge would not affect that SAC.
0200905171	Continue to investigate and, if viable, progress natural flood management schemes in Besthorpe, Ovington, and Saham Toney to manage the risk of surface water flooding	No likely significant effect - Undertaking an investigation will not result in likely significant effects on European sites and while the measure refers to progressing the schemes it clearly states this will only occur if they are viable. Potential for effects on European sites will be a key factor in determining viability. Moreover, Besthorpe and Ovington are 4km from the nearest hydrologically sensitive European site (Norfolk Valley Fens SAC and Breckland SAC respectively) and is not hydrologically connected to it. Saham Toney is even further from the nearest hydrologically sensitive European site.

Measure ID	Measure	Likely Significant Effects on European sites
0200905170	Continue to investigate and, if viable, progress surface water flood risk management schemes in Crimplesham, Watton and Thetford to manage the risk of surface water flooding	No likely significant effect - Undertaking an investigation will not result in likely significant effects on European sites and while the measure refers to progressing the schemes it clearly states this will only occur if they are viable. Potential for effects on European sites will be a key factor in determining viability. Moreover, Crimplesham is 6.4km from the nearest hydrologically sensitive European site (Ouse Washes SAC, SPA and Ramsar site) and is not hydrologically connected to it. Watton is 2.8km from the nearest hydrologically sensitive European site (Breckland SAC) and is not hydrologically connected to it. Thetford is adjacent to Breckland SAC but over 3km from the nearest hydrologically sensitive parts of that site (the Breckland meres and alluvial woodland).
0200905176	Continue to investigate and, if viable, progress the surface water flood risk management schemes in Bury St Edmunds and Newmarket to manage the risk of surface water flooding	No likely significant effect - Undertaking an investigation will not result in likely significant effects on European sites and while the measure refers to progressing the schemes it clearly states this will only occur if they are viable. Potential for effects on European sites will be a key factor in determining viability. Moreover, Newmarket is 3km from the nearest hydrologically sensitive European site (Chippenham Fen SAC) and is not hydrologically connected to it. Bury St Edmunds is even further from the nearest hydrologically sensitive European site.
0206505012	Have greater strategic integration with the Local Highways Authority in Cambridgeshire to encourage better engagement with impacts on local flood risk and uptake of appropriate solutions	No likely significant effect – ensuring greater strategic integration between Cambridgeshire County Council and the local highways authority to encourage better engagement over flood risk and better uptake of solutions to protect roads from flooding will not have an effect on European sites. Specific proposals, once identified, would be subject to their own HRAs as necessary before being consented.

Measure ID	Measure	Likely Significant Effects on European sites
0206505011	Investigate flooding events and identify new opportunities for flood risk management schemes in Cambridgeshire to plan and deliver improved resilience to flood risk	No likely significant effect, but down-the-line HRA required – Investigating flooding events and identifying opportunities for flood risk management schemes is a desk-based activity that will not result in adverse effects on European sites. Individual schemes that come out of the investigation could pose a likely significant effect but any proposals would need to be subject to their own down-the-line HRA process before being consented and implemented. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200905096	Investigate opportunities to enhance telemetry and review forecast models in the River Cam and River Ely Ouse to improve flood forecasting and warning	No likely significant effect – Investigating opportunities for enhancing telemetry and reviewing forecasting models is a desk-based activity that will not result in adverse effects on European sites.
0200905092	Investigate opportunities for attenuation (which may include natural flood management) in Beck Brook, Bar Hill Brook and Cottenham Lode to reduce the risk of flooding from all sources to Bar Hill, Oakington, Girton and Cottenham	No likely significant effect – considering opportunities will not have an effect on European sites. Moreover, Cottenham is the closest settlement to any hydrologically sensitive European site (Ouse Washes SAC, SPA and Ramsar) and is 8.5km distant and is not directly hydrologically connected to it.
0200905098	Lead a physical exercise of the property level resilience measures installed in Gough Way, Cambridge to ensure that all residents know what property level resilience equipment they have, it's condition, and how and when to use it	No likely significant effect – demonstrating already installed property-level resilience measures will not have an effect on European sites
0206505010	Work with partners to better understand and trial measures required to increase the resilience of chalk streams in Cambridgeshire to inform future work and local policies	No likely significant effect – understanding and trialling measures to increase chalk stream resilience to heavy rainfall and flooding will not have an effect on European sites
0200905100	Work with partners to deliver a variety of integrated flood risk and wider benefits when looking at natural flood management measures in the River Cam and its tributaries to maximise opportunities to encourage groundwater recharge to help mitigate water resource pressures	No likely significant effect – maximising the value of natural flood management measures to deliver integrated benefits and maximise groundwater recharge opportunities is environmentally positive would not result in adverse effects on European sites.

Table 16. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Broadland Rivers Management Catchment

Measure ID	Measure	Likely Significant Effects on European sites
0200605031	Align flood defence asset data and information with the requirements of the Environment Agency's asset management system in the Broadland area to use this as the basis of bidding for revenue funding allocations to continue with the current level of flood defence asset maintenance	No likely significant effect – A desk-based exercise to align asset data with the asset management system would not result in adverse effects on European sites.
0200605030	Consider the outputs of Broadland Futures Initiative in the Broadland area to develop a long term integrated flood defence asset management strategy	No likely significant effect – A commitment to develop a long-term integrated flood defence asset management strategy would not result in adverse effects on European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0200605048	Continue to work with East Suffolk Council (as lead authority) in the Broadland Rivers Management Catchment to implement the Lowestoft to Felixstowe shoreline management plan action plan to reduce the risk of flooding and manage coastal change	No likely significant effect – A large number of European sites overlap with the area covered by this measure: Benacre to Eastern Bavents SPA, Benacre to Easton Bavents Lagoons SAC, Minsmere-Walberswick SPA/Ramsar, Minsmere to Walberswick Heaths and Marshes SAC, Sandlings SPA, Alde-Ore Estuary SPA/Ramsar, Alde-Ore & Butley Estuaries SAC, Orfordness-Shingle Street SAC and Deben Estuary SPA/Ramsar. However, the Lowestoft to Felixstowe SMP was subject to its own HRA and this confirmed any mitigation needed to avoid adverse effects on the integrity of European sites or identified any need for compensation for those impacts where adverse effects on integrity cannot be avoided or mitigated but an Imperative Reasons of Overriding Public Interest/No Alternatives justification can be made, with compensation being/to be delivered in the form of the Habitat Compensation Programme. This measure in the FRMP is simply a commitment to continue with implementation of the adopted SMP via implementation of the Action Plan and therefore no likely significant effects will arise from including the measure in the FRMP. This will include developing the specific coastal strategies and schemes needed to implement the SMP, which will be subject to their own HRAs once devised and before they are consented.

Measure ID	Measure	Likely Significant Effects on European sites
0200605047	Continue to work with North Norfolk District Council (as lead authority) and other Coast Protection Authorities in the Broadland Rivers Management Catchment to implement the Kelling Hard to Lowestoft shoreline management plan action plan to reduce the risk of flooding and manage coastal change	No likely significant effect – The Wash SPA/Ramsar site, The Wash & North Norfolk Coast SAC, Overstrand Cliffs SAC, Greater Wash SPA, Great Yarmouth North Denes SPA and Winterton-Horsey Dunes SAC all overlap with the area covered by this measure. However, the Kelling Hard to Lowestoft SMP was subject to its own HRA and this confirmed any mitigation needed to avoid adverse effects on the integrity of European sites or identified any need for compensation for those impacts where adverse effects on integrity cannot be avoided or mitigated but an Imperative Reasons of Overriding Public Interest/No Alternatives justification can be made, with compensation being/to be delivered in the form of the Habitat Compensation Programme. This measure in the FRMP is simply a commitment to implement the adopted SMP via implementation of the Action Plan and therefore no likely significant effects will arise from including the measure in the FRMP. This will include developing the specific coastal strategies and schemes needed to implement the SMP, which will be subject to their own HRAs once devised and before they are consented.
0200605029	Establish a baseline of knowledge and evidence in the Broadland area to help inform the development of the Broadland Futures Initiative strategy	No likely significant effect – Establishing an evidence baseline will not adversely affect European sites.
0200605038	Investigate the risk of flooding and use this evidence to inform potential measures to manage flood risk in Beccles and Aylsham to reduce the risk of flooding	No likely significant effect, but down-the-line HRA required – Investigating flood risk will not adversely affect European sites. While individual potential measures could have likely significant effects once they are identified none have yet been devised and this measure does not commit to any specific actions on the ground. Any measures that fall out of the flood risk investigation will need to be subject to down-the-line HRA before they are consented. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0200605039	Manage flood defences from Eccles to Winterton in the Broadland Rivers Management Catchment to prevent saline intrusion to internationally designated sites and consider the development of a long term strategy to manage this risk in the future.	No likely significant effect – Managing flood defences to prevent saline intrusion into European sites (The Broads SAC and Broadland SPA) is a positive measure for European sites since it is specifically intended to protect them.
0200605050	Utilise the outputs from updated hydraulic modelling in the Broadland Rivers Management Catchment to update forecasting models to help improve the flood warning service	No likely significant effects – updating forecasting models will not result in adverse effects on European sites
0200605034	Work with Natural England, the Broads Authority, Broadland Catchment Partnership, the RSPB, and the Farming and Wildlife Advisory Group in the Broadland area to seek opportunities to engage with existing and emerging farm cluster groups to develop natural flood management and river and floodplain habitat enhancement schemes on a large scale based on the principles of natural function and delivery for the natural environment	No likely significant effect – seeking opportunities to engage with farmers and land managers to develop natural flood management and river/floodplain habitat enhancement schemes is a positive action that will ultimately benefit European sites.
0200605040	Work with Norfolk Rivers Trust, River Waveney Trust, water companies, landowners, Norfolk County Council, and IDBs (amongst others) in the Broadland Rivers Management Catchment to undertake habitat improvements, such as floodplain reconnection, in-channel work, and riparian tree planting, to reduce the risk of flooding and meet Water Framework Directive requirements	No likely significant effect – A commitment to undertake habitat improvements will not result in likely significant effects on European sites and is very likely to be positive for European sites such as improving resilience and the extent of functionally-linked land for SPAs and Ramsar sites.
0200605041	Work with landowners and a range of organisations in the Broadland Rivers Management Catchment to demonstrate and encourage the use of land management techniques that will have multiple benefits to managing flood risk and reducing diffuse pollution from agriculture	No likely significant effect – A commitment to encourage land management techniques and nature based solutions will not result in likely significant effects on European sites and is very likely to be positive for European sites, such as through reducing phosphorus and/or nitrogen inputs.
0200605028	Work with other organisations to develop a long term strategy in the Broadland area to manage future flood risk from all sources	No likely significant effect – a commitment to develop a long-term strategy will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0200605044	Work with partner organisations and landowners in Beccles to review the long term management of flood risk	No likely significant effect, but down-the-line HRA required – Beccles is 1.2km from the nearest component of The Broads SAC/Broadland SPA but a commitment to review the long-term management of flood risk will not affect European sites. Individual initiatives that may arise from that review could result in likely significant effects but this would need to be determined by down-the-line HRA as each initiative is developed. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200605045	Work with partners to investigate the risk of flooding from ordinary watercourses and use this evidence to develop options to manage flood risk in Stalham to reduce the risk of flooding	No likely significant effect, but down-the-line HRA required – Stalham is 600m from the nearest component of The Broads SAC/Broadland SPA but a commitment to investigate the risk of flooding and devise management options will not affect European sites. Individual management options that may arise from that review could result in likely significant effects but this would need to be determined by down-the-line HRA as each initiative is developed. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200605035	Work with the Norfolk Rivers Trust, the River Waveney Trust, the RSPB, and the Farming and Wildlife Advisory Group to engage with landowners in the Broadland area to raise awareness of opportunities available through the new Environmental Land Management agri-environment scheme to help increase uptake of flood mitigation and river and floodplain habitat enhancement options at catchment and landscape scales	No likely significant effect – seeking opportunities to engage with farmers and land managers to develop natural flood management and river/floodplain habitat enhancement schemes is a positive action that will ultimately benefit European sites.

Table 17. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Alconbury Weston Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0200905149	Assess and review the aims of the Alconbury partnership group so members have oversight and ownership of future studies and capital works in the Alconbury Brook catchment to develop a holistic vision for the catchment and reduce the likelihood and/or consequences of flooding	No likely significant effect – assessing and reviewing the aims of the partnership group will not have implications for European sites
0200905152	Carry out capital works which may include both natural flood management and traditional flood risk management options in the Alconbury Brook catchment to implement the recommendations from the catchment-wide study.	No likely significant effect – although this measure is not specific as to what capital works will be involved, the area covered by the measure as shown on Flood Plan Explorer is 7.7km from the nearest European site (Portholme SAC) at its closest and is not directly connected with it.
0200905148	Investigate capacity issues (both foul and surface water outfalls) when the Alconbury Brook is bankfull in Alconbury Weston to consider mitigating measures to prevent further surcharges and liaise with Cambridgeshire County Council (highways) where necessary	No likely significant effect – investigating capacity issues and considering (i.e. identifying) mitigation measures will not have effects on European sites and Alconbury Weston is 7.7km from the nearest such site (Portholme SAC)
0200905150	Investigate how fluvial processes work, interact and are impacted by climate change in the Alconbury Brook catchment to develop a holistic catchment scale understanding of flood risk and inform a package of measures that consider biodiversity net gain and carbon offsetting and can deliver a variety of integrated flood risk, water quality and environmental benefits	No likely significant effect – investigating fluvial processes to inform a package of mitigation measures will not have effects on European sites and Alconbury Weston is 7.7km from the nearest such site (Portholme SAC)
0200905147	Update incident response procedures to endeavour, during a flood, to send out a Community Information Officer in Alconbury Weston to observe the river response and provide information to the community	No likely significant effect – updating incident response procedures will not have effects on European sites
0200905145	Lead a flood warning exercise in Alconbury Weston to practice and refine how the community and partners respond to receiving a flood warning, including using the community flood kit	No likely significant effect – Flood warning exercises will not affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0200905144	Lead a physical exercise of the property level resilience measures installed in Alconbury Weston to ensure that all residents know what property level resilience equipment they have, it's condition and how and when to use it, and consider options to rectify any elements that are in poor condition	No likely significant effect – demonstrating already installed property-level resilience measures will not have an effect on European sites
0200905151	Work with the Alconbury partnership group to programme the capital measures recommended by the Alconbury Brook study in Alconbury Weston to put the community at the heart of decision making and developing an effective delivery plan for each phase of the work	No likely significant effect – this measure is about involving the local community in decision making, which will not have an effect on European sites
0200905146	Develop an engagement plan in Alconbury Weston to promote the work of the partnership group, enhance public awareness of the risk of flooding and measures being developed to mitigate this risk	No likely significant effect – developing an engagement plan will not have an effect on European sites

Alconbury Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0200905008	Assess and review the aims of the Alconbury partnership group so members have oversight and ownership of future studies and capital works in the Alconbury Brook catchment to develop a holistic vision for the catchment and reduce the likelihood and/or consequences of flooding	No likely significant effect – assessing and reviewing the aims of the partnership group will not have implications for European sites
0200905014	Carry out capital works which may include both natural flood management and traditional flood risk management options in the Alconbury Brook catchment to implement the recommendations from the catchment-wide study.	No likely significant effect – although this measure is not specific as to what capital works will be involved, the area covered by the measure as shown on Flood Plan Explorer is 6.2km from the nearest European site (Portholme SAC) at its closest and is not directly connected with it.

Measure ID	Measure	Likely Significant Effects on European sites
0200905006	Investigate capacity issues (both foul and surface water outfalls) when the Alconbury Brook is bankfull in Alconbury Weston to consider mitigating measures to prevent further surcharges and liaise with Cambridgeshire County Council (highways) where necessary	No likely significant effect – investigating capacity issues and considering (i.e. identifying) mitigation measures will not have effects on European sites and Alconbury is 6.2km from the nearest such site (Portholme SAC)
0200905010	Investigate how fluvial processes work, interact and are impacted by climate change in the Alconbury Brook catchment to develop a holistic catchment scale understanding of flood risk and inform a package of measures that consider biodiversity net gain and carbon offsetting and can deliver a variety of integrated flood risk, water quality and environmental benefits	No likely significant effect – investigating fluvial processes to inform a package of mitigation measures will not have effects on European sites and Alconbury is 6.2km from the nearest such site (Portholme SAC)
0200905005	Update incident response procedures to endeavour, during a flood, to send out a Community Information Officer in Alconbury Weston to observe the river response and provide information to the community	No likely significant effect – updating incident response procedures will not have effects on European sites
0200905003	Lead a flood warning exercise in Alconbury Weston to practice and refine how the community and partners respond to receiving a flood warning, including using the community flood kit	No likely significant effect – Flood warning exercises will not affect European sites.
0200905002	Lead a physical exercise of the property level resilience measures installed in Alconbury Weston to ensure that all residents know what property level resilience equipment they have, it's condition and how and when to use it, and consider options to rectify any elements that are in poor condition	No likely significant effect – demonstrating already installed property-level resilience measures will not have an effect on European sites
0200905004	Develop an engagement plan in Alconbury Weston to promote the work of the partnership group, enhance public awareness of the risk of flooding and measures being developed to mitigate this risk	No likely significant effect – developing an engagement plan will not have an effect on European sites

Measure ID	Measure	Likely Significant Effects on European sites
0200905013	Work with the Alconbury partnership group to programme the capital measures recommended by the Alconbury Brook study in Alconbury Weston to put the community at the heart of decision making and developing an effective delivery plan for each phase of the work	No likely significant effect – this measure is about involving the local community in decision making, which will not have an effect on European sites

Table 18. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Boston Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0288805001	Complete works on the walls and flood gates associated with the tidal defences in Boston to complete delivery of Boston Combined Strategy Phase 3, and reduce flood risk from tidal surge	No likely significant effect – this measure is about completing an ongoing scheme that has already been consented
0202305006	Engaging with the local community to increase sign-up to the full Environment Agency Flood Warning service in Boston to create a resilient community, that are aware of and prepared for flood risk	No likely significant effect – engaging with the local community will not result in effects on European sites
0202305023	Engage with upstream landowners to maximise the benefits of the emerging environmental land management scheme in lower Witham and South Forty Foot to reduce the impact of rainfall and soil run-off on flood risk	No likely significant effect – A commitment to encourage land management techniques will not result in likely significant effects on European sites and is very likely to be positive for European sites, such as through reducing phosphorus and/or nitrogen inputs.
0202305015	Progress initial works and develop a long term plan in Boston to sustain tidal defences between grand sluice and the Boston barrier	No likely significant effect – This measure is primarily concerned with developing a long-term plan and the stretch of the River Witham in question is 4.8km upstream of the nearest European site (The Wash SPA and Wash & North Norfolk Coast SPA/Ramsar site) at its closest and separated from it by the Boston tidal barrier.

Measure ID	Measure	Likely Significant Effects on European sites
0202305019	Undertake a programme of continuous monitoring and evaluation of the wash tide gauge in Boston to improve the use of the new forecast model which informs the closure of the barrier	No likely significant effect – monitoring the tidal gauge will not affect European sites
0202305007	Update the modelling and mapping evidence base to take into account latest climate change guidance, and the completion of the Boston Combined Strategy in Boston, to ensure evidence base remains current to inform and prepare the community for the likelihood and consequence of flooding	No likely significant effect – updating modelling and mapping will not affect European sites
0202305008	Use updated evidence to influence the review of local standing advice for development in partnership with the local planning authority in Boston to appropriately guide development, and mitigation of flood risk, to better protect the community from the consequences of flooding	No likely significant effect – a commitment to use updated evidence in reviewing standing advice will not affect European sites

Table 19. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Cambridge Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0206505004	Continue to progress with the existing programme of works in Cambridge to endeavour to increase flood resilience	No likely significant effect – this is simply a commitment to complete an ongoing programme of works
0206505005	Investigate known wet spots across the city in Cambridge to prioritise the need for flood risk management interventions towards better informing the future programme	No likely significant effect – Conducting an investigation to prioritise need will not affect European sites

Table 20. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Chelmsford Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0208805012	Act on recommendations within the Green Infrastructure Strategy and Climate Action Commission in Essex to ensure cross-cutting multiple outcomes	No likely significant effect – A commitment to act on recommendations regarding green infrastructure will not result in effects on European sites and Chelmsford is over 10km from the nearest European sites (Essex Estuaries SAC, Blackwater Estuary SPA/Ramsar and Crouch & Roach Estuaries SPA/Ramsar).
0208805006	Attend quarterly catchment partnership meetings in Essex to share expertise on natural flood management delivery and look for opportunities to deliver cross partnership schemes	No likely significant effect – A commitment to attend meetings will not affect European sites
0208805005	Carry out annual asset inspections on completed capital schemes to review maintenance needs in Essex to identify any future investment needs	No likely significant effect – A commitment to annual asset management inspections will not affect European sites
0208805003	Conduct a twice yearly review with local risk management authority partners in Essex to review current schemes and ensure that, where appropriate, an adaptive approach is taken to enhance resilience	No likely significant effect – A commitment to a twice-yearly review will not affect European sites
0208805014	Continue delivery of educational communications and marketing campaigns of the council's 'Know Your Flood Risk' web pages in Essex to increase awareness of flood risk	No likely significant effect – Increasing awareness of flood risk will not affect European sites
0208805013	Continue marketing of the property flood resilience grant scheme in targeted areas known to be at highest risk in Essex to protect properties experiencing flooding	No likely significant effect – Marketing the flood resilience grant scheme will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0208805004	Continue to progress the floods capital programme, where funding allows in Essex to reduce the risk of flooding	No likely significant effect – A general commitment to progress the floods capital programme where funding allows will not result in effects on European sites and Chelmsford is over 10km from the nearest European sites (Essex Estuaries SAC, Blackwater Estuary SPA/Ramsar and Crouch & Roach Estuaries SPA/Ramsar).
0208805002	Ensure information about risk management authority goals is accessible via Local Flood Risk Management Strategy to develop a joint strategic vision in Essex to provide a delivery plan and set out our priorities and vision	No likely significant effect – Ensuring information is accessible will not affect European sites
0208805011	Feed into the local plan development process in Essex to ensure that local planning policy strengthens national planning legislation	No likely significant effect – A commitment to feed into the Local Plan process will not affect European sites. Local Plan proposals may have effects on European sites but Local Plans are subject to a separate HRA process
0208805007	Identify any key infrastructure that the lead local flood authority deems to be at significant risk of surface water flooding in Chelmsford to help make it resilient to flooding	No likely significant effect – Identifying key infrastructure will not affect European sites
0208805016	Identify community groups at risk and promote the formation of a flood group in Chelmsford to promote community resilience	No likely significant effect – Promoting community involvement will not affect European sites
0208805015	Actively promote awareness of flood risk, dangers of flood water, and various response and recovery roles in Essex to promote individual and community resilience	No likely significant effect – Promoting awareness will not affect European sites
0208805008	Provide guidance about resilience measures to owners of key infrastructure at significant flood risk in Chelmsford to make it resilient to flooding	No likely significant effect – Providing guidance will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0208805009	Running a yearly sustainable drainage systems workshop to better understand challenges faced by developers when meeting local guidance requirements in Essex to improve the quality of sustainable drainage systems applications	No likely significant effect – Running a workshop will not affect European sites
0208805010	Undertake a yearly review of the sustainable drainage systems guide and make changes where appropriate in Essex to continuously improve guidance	No likely significant effect – Updating guidance will not affect European sites

Table 21. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Colchester Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0208805027	Act on recommendations within the Green Infrastructure Strategy and Climate Action Commission in Essex to ensure cross-cutting multiple outcomes	No likely significant effect – A commitment to act on recommendations regarding green infrastructure will not result in effects on European sites and Colchester is over 2km from the nearest European sites (Abberton Reservoir SPA and Colne Estuary SPA/Ramsar and Essex Estuaries SAC).
0208805021	Attend quarterly catchment partnership meetings in Essex to share expertise on natural flood management delivery and look for opportunities to deliver cross partnership schemes	No likely significant effect – A commitment to attend meetings will not affect European sites
0208805020	Carry out annual asset inspections on completed capital schemes to review maintenance needs in Essex to identify any future investment needs	No likely significant effect – A commitment to annual asset management inspections will not affect European sites
0208805018	Conduct a twice yearly review with local risk management authority partners in Essex to review current schemes and ensure that, where appropriate, an adaptive approach is taken to enhance resilience	No likely significant effect – A commitment to a twice-yearly review will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0208805029	Continue delivery of educational communications and marketing campaigns of the council's 'Know Your Flood Risk' web pages in Essex to increase awareness of flood risk	No likely significant effect – Increasing awareness of flood risk will not affect European sites
0208805028	Continue marketing of the property flood resilience grant scheme in targeted areas known to be at highest risk in Essex to protect properties experiencing flooding	No likely significant effect – Marketing the flood resilience grant scheme will not affect European sites
0208805019	Continue to progress the floods capital programme, where funding allows in Essex to reduce the risk of flooding	No likely significant effect – A general commitment to progress the floods capital programme where funding allows will not result in effects on European sites and Colchester is over 2km from the nearest European sites (Abberton Reservoir SPA and Colne Estuary SPA/Ramsar and Essex Estuaries SAC).
0208805017	Ensure information about risk management authority goals is accessible via Local Flood Risk Management Strategy to develop a joint strategic vision in Essex to provide a delivery plan and set out our priorities and vision	No likely significant effect – Ensuring information is accessible will not affect European sites
0208805026	Feed into the local plan development process in Essex to ensure that local planning policy strengthens national planning legislation	No likely significant effect – A commitment to feed into the Local Plan process will not affect European sites. Local Plan proposals may have effects on European sites but Local Plans are subject to a separate HRA process
0208805022	Identify any key infrastructure that the lead local flood authority deems to be at significant risk of surface water flooding in Colchester to help make it resilient to flooding	No likely significant effect – Identifying key infrastructure will not affect European sites
0208805031	Identify community groups at risk and promote the formation of a flood group in Colchester to promote community resilience	No likely significant effect – Promoting community involvement will not affect European sites
0208805030	Actively promote awareness of flood risk, dangers of flood water, and various response and recovery roles in Essex to promote individual and community resilience	No likely significant effect – Promoting awareness will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0208805023	Provide guidance about resilience measures to owners of key infrastructure at significant flood risk in Colchester to make it resilient to flooding	No likely significant effect – Providing guidance will not affect European sites
0208805024	Running a yearly sustainable drainage systems workshop to better understand challenges faced by developers when meeting local guidance requirements in Essex to improve the quality of sustainable drainage systems applications	No likely significant effect – Running a workshop will not affect European sites
0208805025	Undertake a yearly review of the sustainable drainage systems guide and make changes where appropriate in Essex to continuously improve guidance	No likely significant effect – Updating guidance will not affect European sites

Table 22. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Great Yarmouth Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0200605003	Carry out studies to better understand the condition of the existing flood defences, and hydraulic modelling to establish the benefits the defences provide (at present and when considering climate change) prior to progressing capital works to sustain, and where appropriate improve, the tidal flood defences in Great Yarmouth to reduce the risk of tidal flooding	No likely significant effects, but down-the-line HRA required – Great Yarmouth is adjacent to several European sites: Breydon Water SPA, Great Yarmouth North Denes SPA, Outer Thames Estuary SPA and Greater Wash SPA. However, investigating defence condition and undertaking hydraulic modelling will not result in adverse effects on European sites. Specific capital works could have likely significant effects depending on what is involved, but these will not be identified until a later date and will require their own down-the-line HRA before they can be consented. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0200605023	Develop a long term strategy for the management of flood risk, giving due consideration to the findings of Broadland Futures Initiative, in Great Yarmouth to help ensure resilience to future flood risk	No likely significant effects, but down-the-line HRA required – Great Yarmouth is adjacent to several European sites: Breydon Water SPA, Great Yarmouth North Denes SPA, Outer Thames Estuary SPA and Greater Wash SPA. However, a commitment to develop a long-term strategy will not have adverse effects on European sites. Specific initiatives that might be developed for that strategy could have likely significant effects depending on what is involved, but these will not be identified until a later date and will require their own down-the-line HRA before they can be consented. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200605007	Engage with infrastructure providers such as Anglian Water and the National Grid in Great Yarmouth to provide information regarding the potential flood risk benefits of Epoch 3 of the tidal defence project to their assets to help them to make informed investment decisions	No likely significant effects – providing information to infrastructure providers will not have adverse effects on European sites.
0200605021	Carry out an awareness campaign for properties within flood alert/warning areas in Great Yarmouth to enhance public awareness of flood risk	No likely significant effects – awareness raising will not have adverse effects on European sites.
0200605024	Develop detailed local flood risk planning guidance in Great Yarmouth to help ensure that development is sustainable and resilient to future climate change	No likely significant effects – development of local flood risk planning guidance will not have adverse effects on European sites.
0200605004	Work collaboratively to identify funding options for Epoch 3 of the tidal flood defence project in Great Yarmouth to reduce the risk of tidal flooding	No likely significant effects – identifying funding options will not have adverse effects on European sites. The Great Yarmouth Tidal Flood Defence Project is an ongoing initiative (http://greatyarmouthflooddefence.co.uk/) that has been subject to its own HRA.

Measure ID	Measure	Likely Significant Effects on European sites
0200605010	Identify opportunities to achieve flood risk and environmental net gain through development proposals in Great Yarmouth to reduce the risk of flooding and contribute to achieving biodiversity and landscaping improvements	No likely significant effects – identifying opportunities is a desk-based exercise that will not have adverse effects on European sites. Moreover, taking advantage of development proposals to reduce flood risk and deliver biodiversity and landscaping improvements is ecologically positive.
0200605008	Share information on flood defence infrastructure investment in Great Yarmouth to help inform investment decisions for the town centre regeneration and wider development, contributing towards achieving sustainable growth in a climate resilient way	No likely significant effects – sharing information to inform investment decisions is a desk-based exercise that will not have adverse effects on European sites.
0200605005	Work with Great Yarmouth Borough Council, The Broads Authority, and Peel Ports (among others) in Great Yarmouth to improve the long term resilience of flood defence infrastructure	No likely significant effects, but down-the-line HRA required – this is a non-specific commitment to work with other authorities to improve flood defence resilience. It is unclear what those improvements might involve as that is currently unknown (although improvements to flood defence resilience often focus on transition zones between different types of defences e.g. changes from concrete revetment to grass slope, as these are often points of weakness in flood defence solutions). However, since the measure does not commit to specific interventions it is sufficiently broad and flexible that there is no reason to assume it cannot be delivered without likely significant effects on European sites. Once specific interventions to improve defence resilience have been identified these will need to be subject to down-the-line HRA before they are consented. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Table 23. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Horncastle Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0202305026	Continue research into the use of predatory European Eels in the River Bain to manage invasive signal crayfish and concomitant reduction in fine sediment production to further reduce flood risk	No likely significant effect – Horncastle is 29km from the nearest European sites (The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC), none of which are designated for species that may be threatened by the introduction of European eel to the River Bain, this measure involved continuing an ongoing piece of research, and European eels are a protected (under the Eels (England and Wales) Regulations 2009) and environmentally positive species.
0202305010	Engage with the local community to increase sign-up to the full Environment Agency Flood Warning service in Horncastle to create a resilient community, that are aware of and prepared for flood risk	No likely significant effect – engaging with the local community will not pose risk of adverse effects on European sites
0211805006	Implement flood risk management measures in Horncastle to protect property from surface water flooding	No likely significant effect – Horncastle is 29km from the nearest European sites (The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC), and therefore flood risk management measures at the settlement pose no risk of adverse effects.
0202305009	Update the modelling and mapping evidence base to take into account latest climate change, and the completion of the upstream flood storage reservoir in Horncastle to ensure evidence remains current to inform and prepare the community for the likelihood and consequence of flooding	No likely significant effect – updating the modelling and mapping evidence base will not pose risk of adverse effects on European sites
0202305017	Upon completion of a modelling update in the Horncastle area, review and improve the flood forecasting capability in Horncastle to allow more accurate planning and preparation for flooding in the Horncastle	No likely significant effect – reviewing and improving flood forecasting will not pose risk of adverse effects on European sites

Measure ID	Measure	Likely Significant Effects on European sites
0202305020	Investigate opportunities for natural flood management on the upper Waring in Horncastle to reduce sediment build up, improve chalk stream habitat and reduce flood risk	No likely significant effect – Exploring opportunities to deliver natural flood management will not affect European sites and Horncastle is 29km from the nearest European sites (The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC), and therefore flood risk management measures on the upper River Waring pose no risk of adverse effects.

Table 24. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Hunstanton Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0200905038	Carry out a review of the Wash East Coastal Management Strategy in Hunstanton to consider whether new climate change projections and the Shoreline Management Plan review affect the original strategy policies and recommendations and to set out an adaptive pathway approach to manage the risk of sea flooding	No likely significant effect – This is simply a commitment to review the adopted Coastal Strategy (which was subject to its own HRA) in light of the review of the SMP (which sets the broad coastal defence policy for the frontage) and new climate change projections. Any changes to the Coastal Strategy would then be subject to their own HRA in the normal manner.
0200905037	Complete the study investigating the effectiveness of groynes and implement the study recommendations in Hunstanton to manage the risks of sea flooding	No likely significant effect, but down-the-line HRA required – Completion of an ongoing study will not affect European sites. Hunstanton is adjacent to The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC. Individual recommendations from that study may therefore have likely significant effects (although this study is to confirm whether groynes will be effective so it may ultimately result in a recommendation that groynes are not used) and therefore should be subject to down-the-line HRA once the study is complete and before any are consented or implemented, in line with legislative requirements. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0200905191	Continue to issue temporary permits for the shopping kiosks in front of the defences in Hunstanton to ensure that when the permits are renewed, a review is carried out to assess whether it is still appropriate, especially for those that want to operate all year round	No likely significant effect – the continued presence of shopping kiosks are unlikely to materially affect The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC since they are already present, and this measure explicitly states that temporary permits will only be issued if it is still appropriate to do so.
0200905048	Continue to liaise with the shopping kiosk operators when closing flood gates in Hunstanton to ensure that the kiosk holders evacuate once a flood alert has been issued	No likely significant effect – continued liaison with people affected by flooding will not affect European sites
0200905040	Continue to renew temporary planning permission (where evidence demonstrates that this is sustainable) for beach huts and caravans in Hunstanton to ensure that new development is safe and resilient to flooding and supports the recommendations of the current Wash East Coastal Management Strategy and Local Plan policy	No likely significant effect – beach huts and caravans along the coast at Hunstanton could affect European sites (The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC) if they required a section of frontage to be defended when it would not otherwise require defending, as this would exacerbate coastal squeeze (the loss of intertidal habitats as they are inundated due to rising sea levels but unable to retreat inland due to hard flood defences). However, the defence policy (Hold the Line, Managed Realignment etc.) is determined by the Wash East Coastal Strategy (which has been subject to its own HRA) rather than by the FRMP, and this measure explicitly states that any decision to renew temporary planning permission will be based on it supporting the Coastal Strategy. Moreover, the measure also states that temporary planning permissions would only be renewed where evidence demonstrates this is sustainable. A planning permission renewal that led to adverse effects on the integrity of European sites would be inherently unsustainable. This measure does not commit to the renewal of any specific temporary planning consents. Individual decisions to renew planning permission would be subject to HRA as part of normal legal requirements associated with grant or renewal of planning consents.

Measure ID	Measure	Likely Significant Effects on European sites
0200905036	Evaluate and, where viable, progress options for promenade repairs and resurfacing work in Hunstanton to manage the risks of sea flooding	No likely significant effect, but down-the-line HRA required – depending on what would be involved, individual promenade repair and resurfacing works could have effects on The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC, such as through disturbance of sensitive roosting birds for which the SPA and Ramsar are designated. However, this measure only identifies that repairs will be implemented if viable (adversely affecting the integrity of a European site would make them inviable). Proposals will need to be subject to their own HRA as part of the down-the-line consenting process. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200905103	Implement The Wash (Gibraltar Point to Old Hunstanton) Shoreline Management Plan action plan in Hunstanton to reduce the risk of flooding and manage coastal change	No likely significant effect – The Wash SPA/Ramsar site and The Wash & North Norfolk Coast SAC both overlap with the area covered by this measure. However, the Gibraltar Point to Old Hunstanton SMP was subject to its own HRA and this confirmed any mitigation needed to avoid adverse effects on the integrity of European sites or identified any need for compensation for those impacts where adverse effects on integrity cannot be avoided or mitigated but an Imperative Reasons of Overriding Public Interest/No Alternatives justification can be made, with compensation being/to be delivered in the form of the Habitat Compensation Programme. This measure in the FRMP is simply a commitment to implement the adopted SMP via implementation of the Action Plan and therefore no likely significant effects will arise from including the measure in the FRMP. This will include developing the specific coastal strategies and schemes needed to implement the SMP, which will be subject to their own HRAs once devised and before they are consented.

Measure ID	Measure	Likely Significant Effects on European sites
0200905046	Investigate opportunities to enhance telemetry, particularly actual water level recording in Hunstanton to improve flood forecasting and warning	No likely significant effect – enhancing telemetry would not have a negative effect on European sites.
0200905044	Investigate options on the North Beach access road in Hunstanton to ensure that access and egress is maintained during a flood incident	No likely significant effect – Investigating options will not result in likely significant effects on European sites as it is a desk-based activity. Once options have been chosen these could have effects on The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC given their proximity to the North Beach access road. However, the measure does not commit to doing anything to the road and any proposals that did emerge from the investigation would be subject to their own HRA in line with legal requirements before being permitted.
0200905042	Investigate the condition of the earth embankment (second line of defence) and the outfalls within it in between Hunstanton and Wolferton Creek to improve understanding of the resilience of the structures, better inform the Wash East Coastal Management Strategy review and future works	No likely significant effect – investigating the condition of the earth embankment and outfalls will not affect European sites as it will generally involve limited core sampling or visual inspection only.
0200905050	Investigate the scope to establish a flood group in Hunstanton to help improve the resilience of the community to flooding and aid the recovery process following a flood incident	No likely significant effect – investigating the scope to establish a flood group will not affect European sites.
0200905041	Prepare to review the Kings Lynn & West Norfolk Local Plan policies for new development and renewal of temporary planning permission for beach huts and caravans in Hunstanton to ensure it supports any policy changes recommended by the Wash East Coastal Management Strategy review	No likely significant effect –preparing to review a Local Plan will not affect European sites. Local Plans must be reviewed every five years in any event and are subject to their own HRA process before they can be adopted. Any policy changes arising from the Wash East Coastal Strategy may have likely significant effects but the review of the Coastal Strategy will be subject to its own HRA before it can be adopted, as will any schemes that come out of the Coastal Strategy before they can be consented.

Measure ID	Measure	Likely Significant Effects on European sites
0200905039	Prepare to review the business case and associated legal agreement for the beach management work in between South Hunstanton and Wolferton Creek to implement the recommendations from the reviewed Wash East Coastal Management Strategy, in particular to consider any changes to the current policy	No likely significant effect, but down-the-line HRA required – The Wash SPA/Ramsar site and The Wash & North Norfolk Coast SAC both overlap with the area covered by this measure and beach management between South Hunstanton and Wolferton Creek could therefore affect European sites. However, this measure is a commitment to 'prepare to review the business case and associated legal agreement' which will not affect European sites. The Wash East Coastal Strategy (which has recommended the beach management work) has been subject to its own HRA before adoption, and the beach management scheme will be subject to its own down-the-line HRA before it can be consented.
0200905045	Review the flood warning trigger levels in relation to the condition of the flood defences in between Hunstanton and Wolferton Creek to improve flood forecasting and warning	No likely significant effect – Reviewing flood warning trigger levels will not adversely affect European sites
0200905034	Work with Anglian Water and the Borough Council of King's Lynn and West Norfolk to identify and implement opportunities in Hunstanton to reduce the risk of surface water flooding	No likely significant effect – Working with third parties to identify opportunities will not adversely affect European sites. Since this concerns the risk of surface water (rather than fluvial or tidal) flooding it is unlikely any opportunities identified would affect European sites.
0200905049	Monitor non-permitted development and, where necessary, take enforcement action in Hunstanton to ensure the integrity of the coastal defences and to maintain access to the defences for essential maintenance	No likely significant effect – Monitoring non-permitted development and taking enforcement action will not adversely affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0200905035	Work with the Borough Council of King's Lynn and West Norfolk, Anglian Water, and the Community Interest Company to continue beach management work in between South Hunstanton and Wolferton Creek to manage the risks of sea flooding in the Hunstanton	No likely significant effect – Commitment to continue with an existing ongoing activity which has been subject to its own approval process will not adversely affect European sites. Beach management, including beach nourishment, requires MMO licensing and associated HRA and has been deemed acceptable to European sites. Moreover the works fall under The Wash East Coastal Management Strategy which was subject to its own HRA prior to adoption.

Table 25. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Huntingdon Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0206505002	Assess future flood risk in Huntingdon to better understand the risk of climate change to the community and critical infrastructure	No likely significant effect – Assessing future flood risk will not adversely affect European sites.
0206505003	Prioritise the need for flood risk management interventions in Huntingdon to inform the need for a future programme of works	No likely significant effect – this measure is committing to a study to prioritise where interventions are required. Such a study will not affect European sites.

Table 26. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Ipswich Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0216905009	Reappraise the beneficial functions of the original Ipswich Flood Defences and other flood risk management assets located upstream of the tidal barrier, in partnership with Ipswich Borough Council, Suffolk County Council and other asset owners where appropriate in Ipswich to create a maintenance and asset protection strategy	No likely significant effect – Reappraising the functions of original flood defences in order to create a maintenance and asset protection strategy will not adversely affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0216905003	Undertake work to benchmark the level of community resilience to residual tidal flood risk in Ipswich to understand future engagement work required	No likely significant effect – Understanding the extent of future engagement work required will not adversely affect European sites.
0216905002	Update the Ipswich Surface Water Management Plan, in partnership with other risk management authorities, using a catchment based approach in Ipswich to developing an action plan to manage surface water flood risk	No likely significant effect, but down-the-line HRA required – Updating a Surface Water Management Plan and developing an action plan are desk based activities that will not affect European sites. Specific actions could potentially affect European sites once they are identified, given that part of Ipswich is adjacent to the Stour & Orwell Estuaries SPA/Ramsar but that will require down-the-line HRA once the action plan is developed. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0216905005	Update the Safety Framework Supplementary Planning Document in Ipswich to help deliver safe development and provide information for developers, achieving sustainable growth in a climate resilient way	No likely significant effect – A commitment to updating a Supplementary Planning Document will not have adverse effects on European sites. Like all Local Plan-related documents the updated SPD may require HRA once it has been produced before it is published.
0216905004	Work with landlords and accommodation providers (e.g. rental estate agents, housing associations etc.) in Ipswich to enhance awareness amongst landlords and those residing in rental/temporary accommodation of the potential impact of flooding on their lives and livelihoods, encouraging them to improve resilience to flooding of their properties and empowering them to be able to respond to flood incidents more effectively	No likely significant effect – enhancing awareness among landlords and residents will not have adverse effects on European sites.

Table 27. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Kings Lynn Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0200905064	Actively monitor the relationship between recorded water levels at South Quay and observed impacts of flooding in King's Lynn to improve the flood warning service and overall incident response	No likely significant effect – monitoring will not have adverse effects on European sites
0200905066	Explore potential funding mechanisms and opportunities in King's Lynn to cover the funding gap to maintain flood defences in the future	No likely significant effect – exploring funding mechanisms will not have adverse effects on European sites
0200905069	Have a clear understanding and record of flood risk asset ownership in King's Lynn to ensure that any damage to assets can be rectified in a timely manner	No likely significant effect – maintaining a record of flood risk asset ownership will not have adverse effects on European sites
0200905059	Implement the tactical plan, which sets out the level of benefits and costs associated with maintaining existing flood defences in King's Lynn to maintain the current standard of protection of flood defence infrastructure	No likely significant effect – maintaining the existing flood defences in Kings Lynn will not affect European sites, the nearest of which is 1.7km to the east (Dersingham Bog) and 2.4km to the north (The Wash SPA/Ramsar, The Wash & North Norfolk Coast SAC).
0200905060	Look to introduce signage, run awareness campaigns and consider land charges in King's Lynn to raise awareness of the ownership and importance of the flood defences, with a particular focus on third party defences	No likely significant effect – signage, awareness raising and land charges will not have adverse effects on European sites
0200905057	Review previous appraisal reports and recent detailed asset inspections for the flood gates in King's Lynn to establish an appropriate timeframe to undertake future capital maintenance work and commence partnership funding discussions	No likely significant effect – reviewing reports to develop a timeframe is a desk-based activity and will not have adverse effects on European sites
0200905065	Work collaboratively to establish a detailed, risk-based evacuation plan for properties within the flood warning area in King's Lynn to improve incident response	No likely significant effect – establishing an evacuation plan will not have adverse effects on European sites

Measure ID	Measure	Likely Significant Effects on European sites
0200905058	Work in partnership with other Risk Management Authorities in King's Lynn to consider options to manage future flood risk from all sources as part of Phase 2 of the Future Fens Flood Risk Management work	No likely significant effect, but down-the-line HRA required – considering options to manage future flood risk is a desk-based activity that will not have adverse effects on European sites. Individual options may require down-the-line HRA although given Kings Lynn is over 1.7km from the nearest European sites it is unlikely any options that would affect European sites would emerge. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200905061	Work in partnership with the Borough Council of King's Lynn & West Norfolk and King's Lynn IDB to investigate and consider options in King's Lynn to manage the risk of flooding from surface water	No likely significant effect, but down-the-line HRA required – considering options to manage future flood risk is a desk-based activity that will not have adverse effects on European sites. Individual options may require down-the-line HRA although given Kings Lynn is over 1.7km from the nearest European sites it is unlikely any options that would affect European sites would emerge. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200905068	Work with the Environment Agency and Norfolk County Council to produce a Supplementary Planning Document in King's Lynn to consider how planning, growth, and regeneration may provide opportunities to bring about betterment for existing flood risk	No likely significant effect – a commitment to produce an SPD will not affect European sites. Once the SPD is drafted it will require HRA in the standard manner for all Local Plan-related documents. However, given that Kings Lynn is 1.7km from the nearest European site and the purpose of the SPD would be to advise on how to improve the flood risk situation by taking advantage of planned growth and regeneration, it is unlikely any options that would affect European sites would emerge.

Measure ID	Measure	Likely Significant Effects on European sites
0200905067	Work with the Environment Agency and Norfolk County Council to produce a Supplementary Planning Document in King's Lynn to consider how planning, growth, and regeneration policies may need to be amended to account for any changes in standard of service provided by flood defences as a result of any future funding gaps	No likely significant effect – a commitment to produce an SPD will not affect European sites. Once the SPD is drafted it will require HRA in the standard manner for all Local Plan-related documents. However, given that Kings Lynn is 1.7km from the nearest European site and the purpose of the SPD would be to advise on how to amend policies to reflect future funding gaps, it is unlikely any options that would affect European sites would emerge.

Table 28. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Lincoln Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0202305025	Complete the Lincoln Defences project, to refurbish defences and control structures in Lincoln to reduce risk of flooding	No likely significant effect – Lincoln is 50km from the nearest hydrologically sensitive European site (The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC) and is not directly connected to it.
0202305013	Engage with the local community to increase sign-up to the full Environment Agency Flood Warning service in Lincoln to create a resilient community, that are aware of and prepared for flood risk	No likely significant effect – engaging with local communities will not affect European sites
0202305014	Engage with upstream landowners to maximise the benefits of the emerging environmental land management scheme in upper Witham to reduce the impact of rainfall and soil run-off on flood risk	No likely significant effect – The area covered by this measure is 50km from the nearest hydrologically sensitive European site (The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC) and is not directly connected to it.
0211805004	Implement flood risk management measures in Lincoln to protect property from surface water flooding	No likely significant effect – Lincoln is 50km from the nearest hydrologically sensitive European site (The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC) and is not directly connected to it.

Measure ID	Measure	Likely Significant Effects on European sites
0202305011	Update the modelling and mapping evidence base and assess feasibility of automation of the washlands in Lincoln, to take account of the latest climate change allowances and ensure the evidence base remains current, to inform and prepare the community for the likelihood and consequence of flooding, and to realise efficiencies in use of the washlands	No likely significant effect – Lincoln is 50km from the nearest hydrologically sensitive European site (The Wash SPA/Ramsar and The Wash & North Norfolk Coast SAC) and is not directly connected to it.
0202305018	Upon completion of a modelling update in the Lincoln area, review and improve the flood forecasting capability in Lincoln to allow more accurate planning and preparation for flooding	No likely significant effect – reviewing and improving flood forecasting capability and preparation will not affect European sites
0202305012	Work in partnership with planning authorities to create local standing advice in central Lincolnshire to guide appropriate development, and inform mitigation of flood risk, to protect communities from the consequences of flooding	No likely significant effect – the creation of local standing advice on flooding will not affect European sites

Table 29. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Lowestoft Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0200605012	Develop detailed flood risk planning guidance for the construction period and following completion of the flood risk management project in Lowestoft to ensure that development considers the risk of flooding now and in the future	No likely significant effect – the creation of flood risk planning guidance will not affect European sites
0200605020	Engage with infrastructure providers in Lowestoft to better align infrastructure investment with investment in flood risk infrastructure and provide information regarding the potential benefits of the flood defence project to their assets to help them to make informed investment decisions	No likely significant effect – aligning investment and providing information will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0200605018	Investigate the potential to implement natural flood management measures on Kirkley Stream in Lowestoft to reduce the risk of fluvial flooding and improve Water Framework Directive status	No likely significant effect – Investigating the potential to deliver natural flood management will not affect European sites. The Kirkley Stream drains into Lake Lothing and therefore does not directly connect with the Outer Thames Estuary SPA which abuts the entire Lowestoft coastline. Specific natural flood management initiatives would need to be subject to their own HRAs before being consented.
0200605011	Prescribe review points following construction of the flood risk management project in Lowestoft to consider whether flood defence infrastructure needs to be adapted in response to the latest UK Climate Projections, asset design life, and evidence from detailed asset inspections to help ensure resilience to future flood risk	No likely significant effect – prescribing review points will not affect European sites
0200605015	Review and implement modifications (as required) to the flood warning system in Lowestoft to account for changes resulting from the flood risk management project	No likely significant effect – implementing modifications to a flood warning system will not affect European sites
0200605019	Share information on flood defence infrastructure investment in Lowestoft to help inform investment decisions for regeneration and wider development set out in the Town Centre Masterplan, contributing towards achieving sustainable growth in a climate resilient way	No likely significant effect – sharing information on infrastructure investment will not affect European sites
0200605014	Undertake engagement work in schools in Lowestoft to enhance public awareness of flood risk	No likely significant effect – undertaking engagement work will not affect European sites
0200605027	Undertake surveys in Lowestoft to benchmark the level of community resilience and assess how this changes as construction of the flood risk management project progresses to enhance understanding of requirements for future engagement work	No likely significant effect – undertaking surveys will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0200605025	Undertake works to install a tidal barrier as part of the flood risk management project in Lowestoft to reduce the risk of tidal flooding	No likely significant effect, but down-the-line HRA required – To avoid interfering with the outer harbour of the Port of Lowestoft, any tidal barrier will be upstream of the A27 and therefore at least 230m inland of the Outer Thames Estuary SPA and possibly much further. The SPA is designated for three seabirds: foraging little tern and common tern (their nesting sites are protected by separate designations) and resting/foraging non-breeding red throated diver. When using the SPA all of these species are highly mobile since they are not tied to a specific geographic location such as a nest. Red-throated divers are highly sensitive to displacement but only from activities in the marine environment (e.g. boats and ships)[29] and their density in the part of the SPA around Lowestoft is among the lowest in the SPA[30]. Foraging (plunge-diving) terns have low sensitivity to disturbance. It is therefore considered unlikely that a tidal barrier at Lowestoft would have a significant effect on the SPA. Once proposals for a tidal barrier are devised, including location, design and construction programme, a project-level HRA will be required before consent can be granted, in line with legislative requirements.
0200605002	Undertake works to install flood walls as part of the flood risk management project in Lowestoft to reduce the risk of flooding	No likely significant effect, but down-the-line HRA required – Given the separation between Lowestoft settlement and the Outer Thames Estuary SPA due to the intervening outer harbour of the Port of Lowestoft, and the fact that the SPA is designated for its open sea habitat flood walls at Lowestoft would not affect the SPA. Once proposals for flood walls are devised, including location, design and construction programme, a project-level HRA will be required before consent can be granted, in line with legislative requirements.

Measure ID	Measure	Likely Significant Effects on European sites
0200605016	Support developers in response to proposals to deliver flood risk mitigation measures in line with policy WLP2.16 within the Waveney Local Plan to reduce the risk of surface water and fluivial flooding and contribute to environmental betterment of Kirkley Stream	No likely significant effect –The Kirkley Stream drains into Lake Lothing and therefore does not directly connect with the Outer Thames Estuary SPA which abuts the entire Lowestoft coastline. Moreover, the area covered by this measure as shown on Flood Plan Explorer is very localised and is located 2.8km from The Broads SAC/Broadland SPA and 2km from the Outer Thames Estuary SPA and is not connected directly to either.
0200605013	Work with landlords and accommodation providers (e.g. rental estate agents, housing associations and local council housing teams (among others)) in Lowestoft to enhance awareness of and improve response to the potential impact of flooding amongst those residing in rental/temporary accommodation, empowering them to be able to respond to flood incidents more effectively	No likely significant effect – enhancing awareness among landlords and residents will not have adverse effects on European sites.

Table 30. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Mablethorpe Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0202105003	Continue to monitor and undertake beach renourishment works where required, in Mablethorpe, to manage tidal erosion and protect the tidal flood defences	No likely significant effect – although Mablethorpe is adjacent to the Greater Wash SPA, that site is designated for its open water marine habitat (resting and foraging habitat for red-throated diver and plunge-diving foraging habitat for terns) and would therefore not be affected by beach nourishment. Part of Mablethorpe is also adjacent to the Humber Estuary SPA/Ramsar and Saltfleetby-Theddlethorpe Dunes & Gibraltar Point SAC but this measure concerns beach (rather than sand dune) management and is the continuation of an existing long-standing process which would not have been implemented if adverse effects on European sites had been deemed to occur.

Measure ID	Measure	Likely Significant Effects on European sites
0202105002	Engage with the local community, including caravan and campsite owners and visitors, in Mablethorpe and Sutton On Sea to increase sign up to the full Environment Agency Flood Warning Service and create a resilient community that is aware of and prepared for the risk of tidal flooding	No likely significant effect – engaging with the local community will not have adverse effects on European sites
0202105005	Explore opportunities for working in partnership to support development of the Lincolnshire Coastal Country Park in Sutton on Sea to Sandilands to enhance the amenity value of the coastal environment and improve habitats, whilst sustaining the level of protection from flood risk	No likely significant effect – this measure concerns exploring opportunities to influence the delivery of the already committed Country Park to enhance the coastal environment and maintain flood protection. As such it is positive and will not have adverse effects on European sites
0202105004	Work with the local planning authority to influence inclusion of policies, within local plans, that avoid inappropriate development in Mablethorpe to maximise opportunities to reduce flood risk in accordance with the principles set out in the NPPF	No likely significant effect – influencing policy such that inappropriate development is avoided will be positive for European sites

Table 31. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the March Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0206505007	Support riparian asset owners and the community in March to understand the impact of flooding on their lives and livelihoods and the importance of working together to manage risk	No likely significant effect – March is approximately 4km from the Nene Washes SAC, SPA and Ramsar site and 10km from the Ouse Washes SAC, SPA and Ramsar site. Helping people to understand flood risk will not affect European sites
0206505008	Work in partnership in March to create a strategic approach to managing water in the high ground	No likely significant effect – a commitment to working in partnership will not affect European sites and given the location of March and its distance from the two European sites (Ouse Washes and Nene Washes) any approach identified would not affect either site.

Measure ID	Measure	Likely Significant Effects on European sites
0206505006	Work together to explore opportunities to overcome existing barriers in March to identify new delivery mechanisms for flood risk schemes	No likely significant effect – identifying new ways to deliver flood risk schemes will not affect European sites

Table 32. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Market Harborough Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0211605002	Work in partnership with Anglian Water and Harborough District Council to complete the Surface Water Management Plan in Market Harborough to provide an updated surface water flood risk modelling and mapping evidence base and prioritise future local flood management approaches	No likely significant effect – Market Harborough is 24km from the nearest hydrologically sensitive European site (Upper Nene Valley Gravel Pits SPA/Ramsar) and is not connected to it.

Table 33. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Milton Keynes Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0212505009	Adapt local planning policy to require betterment from brownfield sites in areas of sewer stress in Milton Keynes to reduce flood risk and better protect communities	No likely significant effect – Requiring betterment from brownfield sites will not result in likely significant effects on European sites. Moreover, the nearest sizeable settlement in Milton Keynes (Olney) is 9km from the nearest hydrologically sensitive European site (Upper Nene Valley Gravel Pits SPA/Ramsar site) and is not hydrologically connected to it.
0212505010	Explore opportunities for verification of Sustainable Drainage Schemes after development in Milton Keynes to reduce flood risk and better protect communities	No likely significant effect – Exploring opportunities for verifying SUDS will not result in likely significant effects on European sites.
0212505008	Identify a long term strategy to lower flood risk and improve flood resilence in Coffeehall and Stoke Goldington in Milton Keynes to reduce flood risk and better protect communities	No likely significant effect – These areas are 24km from the nearest hydrologically sensitive European site (Upper Nene Valley Gravel Pits SPA/Ramsar site) and are not hydrologically connected to it.

Measure ID	Measure	Likely Significant Effects on European sites
0212505007	Identify a long term strategy to mitigate flood risk from all sources through scheme development in Milton Keynes to reduce flood risk and better protect communities	No likely significant effect – The nearest sizeable settlement in Milton Keynes (Olney) is 9km from the nearest hydrologically sensitive European site (Upper Nene Valley Gravel Pits SPA/Ramsar site) and is not hydrologically connected to it.
0212505011	Integrate new infrastructure with existing strategic storm water network in Milton Keynes to reduce flood risk and better protect communities	No likely significant effect – Integrating new infrastructure with existing infrastructure will not result in likely significant effects on European sites.
0212505005	Investigate opportunities for securing partnership funding and streamline the delivery of smaller flood alleviation schemes in Milton Keynes to reduce flood risk	No likely significant effect – Investigating opportunities for securing funding will not result in likely significant effects on European sites.
0212505002	Investigate opportunities to utilise greenspaces for flood management in Milton Keynes to reduce flood risk	No likely significant effect – Utilising greenspaces for flood management will not result in likely significant effects on European sites.
0212505004	Investigate the capacity of the existing balancing lake network and look for opportunities for smarter controls through digitisation in Milton Keynes to reduce flood risk and manage water more efficiently	No likely significant effect – Investigating balancing lake network capacity and introducing smart controls will not result in likely significant effects on European sites.
0212505003	Utilise smarter technology for flood management through installing digital controls as part of the development of Milton Keynes University in Milton Keynes to explore smarter water management	No likely significant effect – Installing digital controls at Milton Keynes University will not result in likely significant effects on European sites.
0212505006	Work with communities to improve flood resilience and flood recovery in Milton Keynes to better prepare communities for future flooding	No likely significant effect – Better preparing communities for flooding will not result in likely significant effects on European sites.

Table 34. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Northampton Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0202205006	Develop a long term funding strategy for structures on the River Nene in Northampton to both reduce flood risk and fulfil statutory responsibilities concerning navigation	No likely significant effect – Developing a long-term funding strategy will not result in likely significant effects on European sites.
0202205004	Seek to undertake a project to appraise future risks from fluvial flooding in Northampton to determine options for climate change adaptation and identify opportunities to reduce flood risk	No likely significant effect – Appraising future risks from fluvial flooding will not result in likely significant effects on European sites.
0202205003	Undertake a programme of monitoring and evaluation of the natural flood management scheme in the Wootton Brook Catchment to indicate the extent to which the project has reduced flood risk to properties, improved habitats and increased biodiversity	No likely significant effect – Monitoring and evaluating the success of a scheme will not result in likely significant effects on European sites.
0202205013	Work with the local planning authority to influence inclusion of policies, within local plans, that avoid inappropriate development in Northampton, to maximise opportunities to reduce flood risk in accordance with the principles set out in the NPPF	No likely significant effect – Influencing Local Plan policy to avoid inappropriate development will not result in likely significant effects on European sites.
0213405004	Implement flood risk improvement works in Far Cotton, Northampton to reduce the risk of surface water flooding	No likely significant effect – Far Cotton is 2.7km from Upper Nene Valley Gravel Pits SPA/Ramsar and implementing flood risk improvements there would not affect the SPA/Ramsar site.
0213405010	Implement flood risk improvement works in the Berry Lane area of Wooton to reduce risk of flooding from surface water	No likely significant effect – Wooton is 2.9km from Upper Nene Valley Gravel Pits SPA/Ramsar and implementing flood risk improvements there would not affect the SPA/Ramsar site.
0213405006	Investigate options to pilot surface water flood forecasting in Northampton to create resilient communities	No likely significant effect – Investigating options to pilot surface water flood forecasting will not result in likely significant effects on European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0213405011	Investigate potential for local flood risk management works within the areas affected by significant flooding in May 2018 in Northampton to reduce the risk of flooding from surface water	No likely significant effect – Merely investigating the potential for local flood risk management works will not result in likely significant effects on European sites.
0202205018	Review Flood Warning Area extents and thresholds after each flood incident, or when new mapping and modelling is made available in Northampton, to reduce the consequences of flooding by enabling communities to take effective action before, during and after a flood	No likely significant effect – Reviewing Flood Warning Area extents will not result in likely significant effects on European sites.
0213405009	Work with infrastructure owners to identify key infrastructure at risk of flooding in Northampton to improve resilience to flood risk	No likely significant effect – Identifying key infrastructure at risk of flooding will not result in likely significant effects on European sites.

Table 35. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Norwich Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0212805005	Continue to offer grants to property owners who suffer surface water flooding in Norwich to help install property level resilience measures; and to implement small scale drainage improvement works if external funding can be secured	No likely significant effect – Offering grants to property owners will not result in likely significant effects on European sites.
0212805006	Continue to prioritise consultation responses to major planning applications, while seeking opportunities for flood risk betterment, in Critical Drainage Catchments and will work with LPAs in Norwich to increase the flood risk knowledge of planning officers who deal with minor development	No likely significant effect – Prioritising consultation responses while seeking opportunities for flood betterment will not result in likely significant effects on European sites.
0212805008	Engage with Parish Councils, community groups and other organisations in Norwich to increase the understanding of local flood risk	No likely significant effect – Engaging with local groups will not result in likely significant effects on European sites.
0212805007	Review the level of protection provided by major drainage assets constructed as part of new development in Norwich to include in the flood risk asset register if relevant	No likely significant effect – Reviewing levels of protection will not result in likely significant effects on European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0212805002	Review the local flood risk in all sub-catchments within the Norwich urban area and re-assign Critical Drainage Catchments if appropriate in Norwich to create accurate risk ranking of catchments	No likely significant effect – Reviewing local flood risk will not result in likely significant effects on European sites.
0212805009	Seek funding in Norwich to implement mapping of drainage assets across the Norwich urban area	No likely significant effect – Seeking funding will not result in likely significant effects on European sites.
0212805004	Seek opportunities in Norwich to achieve flood risk betterment in urban regeneration schemes (such as Transforming Cities) and master planning for major urban redevelopment (such as the East Norwich Redevelopment Area)	No likely significant effect – Seeking opportunities for flood risk betterment will not result in likely significant effects on European sites.
0212805003	Submit funding bids in Norwich to implement further small-scale Sustainable Drainage Systems retrofit schemes, including the use of smart water storage installations	No likely significant effect – Submitting funding bids will not result in likely significant effects on European sites.
0212805010	Trial the use of gully sensors in Norwich to inform the drainage maintenance regime	No likely significant effect – Using gully sensors will not result in likely significant effects on European sites.

Table 36. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Oakham Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0215005002	Undertake a study to investigate the risk of flooding in Oakham to inform future actions to manage flood risk	No likely significant effect – Undertaking a study to investigate flood risk will not result in likely significant effects on European sites.

Table 37. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Oakington Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0200905031	Assess options to install a CCTV camera in Oakington to improve understanding of flood risk and enhance incident response	No likely significant effect – Installing a CCTV camera will not result in likely significant effects on European sites. Oakington is 13km from the nearest hydrologically sensitive European site (Fenland SAC).
0200905033	Continue to undertake maintenance on awarded watercourses and associated structures in Oakington to reduce the risk of fluvial flooding	No likely significant effect – Continuing maintenance will not result in likely significant effects on European sites. Oakington is 13km from the nearest hydrologically sensitive European site (Fenland SAC).
0200905029	Investigate flood risk management options in Oakington to reduce the risk of flooding, taking account of measures looking to attenuate water upstream (on the upper reaches of Oakington Brook and as part of the Northstowe development), potential channel modifications and natural flood management, as well as any modifications to existing property level resilience measures	No likely significant effect – Investigating flood risk management options will not result in likely significant effects on European sites.
0200905070	Investigate opportunities to include information in the village publication in Oakington to raise awareness of work being undertaken by the Environment Agency and promote actions for residents to increase their resilience to flooding	No likely significant effect – Including information in the village publication will not result in likely significant effects on European sites.
0200905030	Investigate scope for improved river gauging in Oakington to improve understanding of the fluvial flood risk and enhance response to and preparedness for flood incidents	No likely significant effect – Improving river gauging will not result in likely significant effects on European sites.
0200905032	Work with South Cambridgeshire District Council and the Parish Council to investigate opportunities to secure developer contributions in Oakington to help maintain watercourses and implement blue/green infrastructure	No likely significant effect – Securing developer contributions will not result in likely significant effects on European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0200905028	Work with the Parish Council to carry out a campaign in Oakington to raise awareness of the increased flood risk associated with watercourse blockages, and highlight responsibilities for watercourse maintenance	No likely significant effect – Undertaking an awareness raising campaign will not result in likely significant effects on European sites.

Table 38. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Saffron Waldon Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0200905019	Carry out joint walkovers of the watercourses in Saffron Walden to identify issues and agree future channel maintenance activities	No likely significant effect – Saffron Walden is over 27km from the nearest hydrologically sensitive site (Lee Valley SPA/Ramsar) and is not connected to it.
0200905016	Consider if there are any feasible options relating to a riparian owner shared funding mechanism in Saffron Walden to contribute to and enable future repairs on the Town Centre Culvert	No likely significant effect – Saffron Walden is over 27km from the nearest hydrologically sensitive site (Lee Valley SPA/Ramsar) and is not connected to it.
0200905007	Consider whether there are opportunities to secure developer contributions in Saffron Walden to help implement blue/green infrastructure	No likely significant effect – Saffron Walden is over 27km from the nearest hydrologically sensitive site (Lee Valley SPA/Ramsar) and is not connected to it.
0200905020	Continue to maintain out of hours procedures, and Saffron Walden Town Council will maintain 'daytime' procedures to clear the Town Centre trash screen in Saffron Walden to reduce the risk of fluvial flooding	No likely significant effect – Saffron Walden is over 27km from the nearest hydrologically sensitive site (Lee Valley SPA/Ramsar) and is not connected to it.
0200905024	Continue with its 6 yearly CCTV inspection programme of the Town Centre Culvert in Saffron Walden to reduce the risk of fluvial flooding	No likely significant effect – Saffron Walden is over 27km from the nearest hydrologically sensitive site (Lee Valley SPA/Ramsar) and is not connected to it.

Measure ID	Measure	Likely Significant Effects on European sites
0200905026	Develop a contingency plan in Saffron Walden to manage the risk of flooding should the Town Centre Culvert collapse during a flood event	No likely significant effect – Saffron Walden is over 27km from the nearest hydrologically sensitive site (Lee Valley SPA/Ramsar) and is not connected to it.
0200905027	Develop the Neighbourhood Plan in Saffron Walden to set out ambitions for implementing blue/green infrastructure	No likely significant effect – Saffron Walden is over 27km from the nearest hydrologically sensitive site (Lee Valley SPA/Ramsar) and is not connected to it.
0200905023	Improve the telemetry and flood warning service in Saffron Walden to be better prepared for flood incidents	No likely significant effect – Saffron Walden is over 27km from the nearest hydrologically sensitive site (Lee Valley SPA/Ramsar) and is not connected to it.
0200905022	Install CCTV to monitor the culvert trash screen in Saffron Walden to ensure that blockages can be removed in a timely manner, reducing the risk of fluvial flooding	No likely significant effect – Saffron Walden is over 27km from the nearest hydrologically sensitive site (Lee Valley SPA/Ramsar) and is not connected to it.
0200905017	Investigate options and decide how to proceed with arrangements for riparian owners in Saffron Walden to be able to contribute to the long term maintenance of the Town Centre Culvert	No likely significant effect – Saffron Walden is over 27km from the nearest hydrologically sensitive site (Lee Valley SPA/Ramsar) and is not connected to it.
0200905021	Investigate the impacts of climate change and the potential to implement natural flood management measures in Slade Brook to reduce the risk of fluvial flooding	No likely significant effect – Saffron Walden is over 27km from the nearest hydrologically sensitive site (Lee Valley SPA/Ramsar) and is not connected to it.
0200905025	Undertake regular clearance of the trash screen at the inlet of the Town Centre culvert in Saffron Walden to reduce the risk of fluvial flooding	No likely significant effect – Saffron Walden is over 27km from the nearest hydrologically sensitive site (Lee Valley SPA/Ramsar) and is not connected to it.

Measure ID	Measure	Likely Significant Effects on European sites
0200905015	Undertake repair works to the Town Centre Culvert in Saffron Walden to reduce the risk of fluvial flooding	No likely significant effect – Saffron Walden is over 27km from the nearest hydrologically sensitive site (Lee Valley SPA/Ramsar) and is not connected to it.
0200905018	Work with local partners to carry out an awareness campaign for riparian owners upstream of the Town Centre Culvert in Saffron Walden to improve the understanding of flood risk and raise awareness of how rubbish and blockages within the watercourse can increase flood risk	No likely significant effect – Saffron Walden is over 27km from the nearest hydrologically sensitive site (Lee Valley SPA/Ramsar) and is not connected to it.

Table 39. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Skegness Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0202105007	Continue to monitor and undertake beach renourishment works where required, in between Chapel St Leonards and Ingoldmells to manage tidal erosion and benefit the tidal flood defences	No likely significant effect – the southern part of Skegness is adjacent to Saltfleetby-Theddlethorpe Dunes & Gibraltar Point SAC and The Wash & North Norfolk Coast SPA/Ramsar. However, the area covered by this measure is 2.3km north of the SAC and 3.7km north of the SPA/Ramsar site. The Greater Wash SPA is adjacent to the area where beach nourishment would occur but this SPA is designated for its open water habitat which is used by red-throated diver, common scoter and little gull outside the breeding season and foraging (plunge diving) terns during the breeding season. Beach nourishment will not affect any of these SPA features.
0202105006	Engage with the local community, including caravan and campsite owners and visitors, in Skegness, Ingoldmells and Chapel St Leonards to increase sign up to the full Environment Agency Flood Warning Service and create a resilient community that is aware of and prepared for the risk of tidal flooding	No likely significant effect – engaging with the local community will not result in effects on European sites

Measure ID	Measure	Likely Significant Effects on European sites
0202105009	Explore opportunities for working in partnership to support development of the Lincolnshire Coastal Country Park in Chapel St Leonards to enhance the amenity value of the coastal environment and improve habitats, whilst sustaining the level of protection from flood risk	No likely significant effect – this measure concerns exploring opportunities to influence the delivery of the already committed Country Park to enhance the coastal environment and maintain flood protection. As such it is positive and will not have adverse effects on European sites
0202105008	Work with the local planning authority to influence inclusion of policies, within local plans, that avoid inappropriate development in Skegness to maximise opportunities to reduce flood risk in accordance with the principles set out in the NPPF	No likely significant effect – Influencing Local Plan policy to avoid inappropriate development will not result in likely significant effects on European sites.

Table 40. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the South Essex Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0208805072	Act on recommendations within the Green Infrastructure Strategy and Climate Action Commission in Essex to ensure cross-cutting multiple outcomes	No likely significant effect – A commitment to act on recommendations regarding green infrastructure will not result in effects on European sites, notwithstanding that the south Essex coast is almost entirely internationally designated as SPA and/or SAC.
0208805066	Attend quarterly catchment partnership meetings in Essex to share expertise on natural flood management delivery and look for opportunities to deliver cross partnership schemes	No likely significant effect – attending meetings to share expertise will not affect European sites
0208805065	Carry out annual asset inspections on completed capital schemes to review maintenance needs in Essex to identify any future investment needs	No likely significant effects – annual inspections of assets will not affect European sites
0208805063	Conduct a twice yearly review with local risk management authority partners in Essex to review current schemes and ensure that, where appropriate, an adaptive approach is taken to enhance resilience	No likely significant effects – a commitment to reviewing current schemes to identify where an adaptive approach is appropriate will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0208805074	Continue delivery of educational communications and marketing campaigns of the council's 'Know Your Flood Risk' web pages in Essex to increase awareness of flood risk	No likely significant effects – delivering educational communications will not affect European sites
0208805073	Continue marketing of the property flood resilience grant scheme in targeted areas known to be at highest risk in Essex to protect properties experiencing flooding	No likely significant effects – marketing the flood resilience grant scheme will not affect European sites
0208805064	Continue to progress the floods capital programme, where funding allows in Essex to reduce the risk of flooding	No likely significant effect, but down-the-line HRA required – A general commitment to progress the floods capital programme where funding allows will not result in effects on European sites. Since the majority of the south Essex coast is internationally designated specific elements of the capital programme may require down-the-line HRA before they are consented and implemented, but that will only apply to areas at risk from coastal flooding. Based on the detailed measure information on the Flood Plan Explorer website, this measure is mainly concerned with surface water flooding rather than fluvial or tidal flooding. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0216205005	Continue to work with Anglian Water in Southend to improve flood resilience across urban areas and improve rural flood resilience using natural flood and land management measures	No likely significant effect – there is no reason to believe that urban flood resilience measures (such as sandbags, self-closing airbricks, flood-resilient walls or flood doors) will affect European sites and nor will exploring opportunities to deliver natural flood management in rural areas, not least since the rural parts of Southend-on-Sea are at least 2km inland from the coastline that is internationally designated.
0216205003	Continue to work with Anglian Water, Essex County Council, the Environment Agency, and Rochford District Council to progress a flood alleviation scheme in the area of Eastwood Brook to reduce the risk of surface water and fluvial flooding	No likely significant effect – this flood alleviation scheme is already being implemented and a commitment to continue with an existing scheme will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0216205006	Continue to work with the Environment Agency, Anglian Water, Essex County Council, and Rochford District Council to progress a flood alleviation scheme in the area of Prittle Brook in Southend to reduce the risk of surface water and fluvial flooding	No likely significant effect – this flood alleviation scheme is already being implemented and a commitment to continue with an existing scheme will not affect European sites
0216205007	Develop and implement the Shoreline Strategy in Southend to outline the long-term delivery plan for the coastal zone, giving consideration to local flood risk, climate change, and environmental benefits	No likely significant effect – a commitment to develop and implement a shoreline strategy, without committing to any elements of that strategy (since it does not yet exist) will not result in adverse effects on European sites. The strategy itself will require HRA before it is adopted, in line with standard legal requirements.
0216205002	Develop clear planning policy advice that is consistent with National and Regional flood risk management policies and strategies, and identify opportunities to achieve flood risk betterment in Southend Borough to reduce the risk of flooding from all sources through updates to the Local Plan policy document and development of a Southend Sustainable Drainage Systems Design and Adoption Guide	No likely significant effect – a commitment to develop clear planning policy advice and identify opportunities for flood risk betterment will not affect European sites, not least because the reference to a Southend SUDS design and adoption guide indicates this measure is concerned primarily with surface water flooding rather than fluvial or tidal flooding.
0208805062	Ensure information about risk management authority goals is accessible via Local Flood Risk Management Strategy to develop a joint strategic vision in Essex to provide a delivery plan and set out our priorities and vision	No likely significant effect – making information available about goals will not affect European sites
0208805071	Feed into the local plan development process in Essex to ensure that local planning policy strengthens national planning legislation	No likely significant effect – a commitment to influencing the Local Plan development process to ensure strong policy to manage flood risk will not affect European sites
0208805067	Identify any key infrastructure that the lead local flood authority deems to be at significant risk of surface water flooding in South Essex to help make it resilient to flooding	No likely significant effect – identifying key infrastructure at significant risk of surface water flooding will not affect European sites

Measure ID	Measure	Likely Significant Effects on European sites
0208805076	Identify community groups at risk and promote the formation of a flood group in South Essex to promote community resilience	No likely significant effect – identifying communities at risk and promoting the formation of a flood group will not affect European sites
0208805075	Partner with Essex Flood Board members to actively promote awareness of flood risk, dangers of flood water, and various response and recovery roles in Essex to promote individual and community resilience	No likely significant effect – promoting awareness will not affect European sites
0208805068	Provide guidance about resilience measures to owners of key infrastructure at significant flood risk in South Essex to make it resilient to flooding	No likely significant effect – providing guidance will not affect European sites
0216205004	Publish information and hold public engagement events in Southend to increase public awareness of flood and coastal erosion risk management responsibilities relating to riparian ownership and maintenance of drainage systems	No likely significant effect – promoting awareness will not affect European sites
0208805069	Run a yearly sustainable drainage systems workshop to better understand challenges faced by developers when meeting local guidance requirements in Essex to improve the quality of sustainable drainage systems applications	No likely significant effect – promoting awareness will not affect European sites
0208805070	Undertake a yearly review of the sustainable drainage systems guide and make changes where appropriate in Essex to continuously improve guidance	No likely significant effect – Committing to reviewing or updating SuDS guidance will not affect European sites in Essex as SuDS guidance is associated with surface water (rather than fluvial or coastal flooding) and updating guidance is a desk based activity.
0217606018	Work in partnership with the Environment Agency and Anglian Water in Stanford le Hope to develop a wider-ranging integrated urban drainage study to develop appropriate measures to reduce the risk of flooding	No likely significant effect – Developing an urban drainage strategy for Stanford-le-Hope will not affect European sites as such a strategy will address surface water (rather than fluvial or tidal) flooding and Stanford-le-Hope is more than 1km from the nearest European site (Thames Estuary & Marshes SPA/Ramsar site)

Table 41. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Spalding Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0211805007	Implement flood risk management measures in Spalding to protect property from surface water flooding	No likely significant effect – Spalding is 11km from the nearest European site (The Wash SPA/Ramsar site and Wash & North Norfolk Coast SAC) and this European site will not be affected by surface water flooding protection measures in Spalding.
0202205014	Progress appraisal of the Maxey Cut raised banks upstream of Spalding, to identify opportunities to improve river corridor habitat and improve the ecological resilience of the Maxey Cut to extreme high and low flows, whilst sustaining the standard of protection provided to reduce flood risk	No likely significant effect – Spalding is 11km from the nearest European site (The Wash SPA/Ramsar site and Wash & North Norfolk Coast SAC) and this European site will not be affected by surface water flooding protection measures in Spalding.
0202205016	Review Flood Warning Area extents and thresholds after each flood incident, or when new mapping and modelling is made available in Spalding, to reduce the consequences of flooding by enabling communities to take effective action before, during and after a flood	No likely significant effect – reviewing flood warning area extents will not affect European sites
0202205002	Work with professional partners to undertake a comprehensive review of the existing upstream flood risk management assets in the Lower Welland to develop a sustainable maintenance regime to manage flood risk	No likely significant effect – undertaking a review of assets to devise a sustainable maintenance regime will not affect European sites. Moreover, Spalding is 11km from the nearest European site (The Wash SPA/Ramsar site and Wash & North Norfolk Coast SAC).
0202205011	Work with the local planning authority to influence inclusion of policies, within local plans, that avoid inappropriate development in Spalding, to maximise opportunities to reduce flood risk in accordance with the principles set out in the NPPF	No likely significant effect – Influencing Local Plan policy to avoid inappropriate development will not result in likely significant effects on European sites.

Table 42. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Wisbech Flood Risk Area

Measure ID	Measure	Likely Significant Effects on European sites
0202205017	Review Flood Warning Area extents and thresholds after each flood incident, or when new mapping and modelling is made available in Wisbech, to reduce the consequences of flooding by enabling communities to take effective action before, during and after a flood	No likely significant effect – reviewing flood warning area extents will not affect European sites
0202205010	Undertake a comprehensive review of the existing flood risk management assets, in the Nene catchment and upstream of Wisbech, to reduce the risk of flooding	No likely significant effect – reviewing flood risk management assets will not affect European sites
0202205025	Update the modelling and mapping evidence base to take into account latest climate change guidance, in the Tidal Nene, to ensure the evidence base remains current to inform and prepare the community for the likelihood and consequence of flooding	No likely significant effect – updating modelling and mapping will not affect European sites
0202205023	Work with partners, landowners and communities to identify opportunities and funding for integrated projects in Wisbech, to improve the ecological status and amenity value of water bodies, whilst reducing flood risk	No likely significant effect – identifying opportunities and funding to improve ecology will not affect European sites
0202205012	Work with the local planning authority to influence inclusion of policies, within local plans, that avoid inappropriate development in Wisbech, to maximise opportunities to reduce flood risk in accordance with the principles set out in the NPPF	No likely significant effect – Influencing Local Plan policy to avoid inappropriate development will not result in likely significant effects on European sites and Wisbech is over 7km from the nearest hydrologically sensitive European site (Nene Washes SAC, SPA and Ramsar site).

Table 43. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Fens and Lowlands Strategic Area

Measure ID	Measure	Likely Significant Effects on European sites
0206505009	Continue as a valued partner to develop long-term plans to manage the risk of flooding in the Cambridgeshire Fens to support engagement with communities around the vision for the Fens and what infrastructure is needed	No likely significant effect – Supporting community engagement with long-term plans to manage flood risk will not have adverse effects on European sites.
0200905167	Continue strategic reviews and, if viable, progress works arising (aligned to the tactical plans) in Littleport and Downham IDB, Middle Fen and Mere IDB, Swaffham IDB, Burnt Fen IDB, Cawdle Fen IDB, Stoke Ferry IDB, East of Ouse, Old West IDB, Polver and Nar IDB and Southery IDB to manage the risk of flooding	No likely significant effect, but down-the-line HRA required – depending on what would be involved, individual works in these IDB areas could have effects on European sites but this measure only identifies that such schemes will be implemented if viable (adversely affecting the integrity of a European site would make them inviable) and in any event this measure is primarily a commitment to continue the ongoing strategic review process. Schemes will be subject to their own HRA as part of the down-the-line consenting process. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0288805037	Continue strategic reviews and, if viable, progress works arising (aligned to the tactical plans) in Stoke Ferry IDB, East of Ouse Polver & Nar IDB, and Southery IDB to manage the risk of flooding	No likely significant effect, but down-the-line HRA required – depending on what would be involved, individual works in these IDB areas could have effects on European sites but this measure only identifies that such schemes will be implemented if viable (adversely affecting the integrity of a European site would make them inviable) and in any event this measure is primarily a commitment to continue the ongoing strategic review process. Schemes will be subject to their own HRA as part of the down-the-line consenting process. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0200905172	Continue to investigate and, if viable, progress surface water flood risk management schemes (aligned to the tactical plans) in Downham Market and Marham to manage the risk of surface water flooding	No likely significant effect, but down-the-line HRA required – Downham Market is 2km from the Ouse Washes SAC, SPA and Ramsar site. Depending on what would be involved, individual schemes could have effects on European sites but this measure only identifies that such schemes will be implemented if viable (adversely affecting the integrity of a European site would make them inviable) and in any event this measure is primarily a commitment to continue investigating the potential for such schemes. Schemes will be subject to their own HRA as part of the down-the-line consenting process. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200905175	Continue to investigate and, if viable, progress the pumping station project (aligned to the tactical plans) in Lodes End to manage the risk of flooding	No likely significant effect – Lodes End at Ramsey is 5km from Fenland SAC but is not connected to it. This measure only identifies that the pumping station project will continue to be investigated and will be implemented if viable (adversely affecting the integrity of a European site would make them inviable).
0200905168	Continue to investigate and, if viable, progress the pumping station projects (aligned to the tactical plans) in Acre Fen, Burrowmoor, Conington, Curf, Glenhouse, Green Dyke, Iron Bridge, Latches Fen, Mepal, Nordelph, Reed, Ring's End, White Fen, Wimblington Common, Finchams Farm, Bevils Leam, and Upwell Fen to manage the risk of flooding	No likely significant effect, but down-the-line HRA required – depending on what would be involved, individual works in these IDB areas could have effects on European sites but this measure only identifies that such schemes will be implemented if viable (adversely affecting the integrity of a European site would make them inviable) and in any event this measure is primarily a commitment to continue the ongoing strategic review process. Schemes will be subject to their own HRA as part of the down-the-line consenting process. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0200905166	Continue to investigate and, if viable, progress the pumping station projects (aligned to the tactical plans) in Bottisham Locks, Lakenheath, Padnal, Redmore, Waterden to manage the risk of flooding	No likely significant effect, but down-the-line HRA required – depending on what would be involved, individual works in these IDB areas could have effects on European sites but this measure only identifies that such schemes will be implemented if viable (adversely affecting the integrity of a European site would make them inviable) and in any event this measure is primarily a commitment to continue the ongoing strategic review process. Schemes will be subject to their own HRA as part of the down-the-line consenting process. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200905165	Continue to investigate and, if viable, progress the pumping station projects (aligned to the tactical plans) in Magdalen Bridge, Pierrepoint, and Crabbs Abbey to manage the risk of flooding	No likely significant effect, but down-the-line HRA required – depending on what would be involved, individual works in these IDB areas could have effects on European sites but this measure only identifies that such schemes will be implemented if viable (adversely affecting the integrity of a European site would make them inviable) and in any event this measure is primarily a commitment to continue the ongoing strategic review process. Schemes will be subject to their own HRA as part of the down-the-line consenting process. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0200905169	Continue to progress its telemetry, Bank Raising, Needham and Laddus culvert replacement and River Delph improvement projects in the Middle Level Area to manage the risk of flooding	No likely significant effect, but down-the-line HRA required – depending on what would be involved, individual works in these IDB areas could have effects on European sites but this measure only identifies that such schemes will be implemented if viable (adversely affecting the integrity of a European site would make them inviable) and in any event this measure is primarily a commitment to continue the ongoing strategic review process. Schemes will be subject to their own HRA as part of the down-the-line consenting process. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200905158	Continue to progress the Tidal River Management Strategy in the Great Ouse Tidal river to sustain the standard of service of the tidal river assets up to 2032 which includes channel conveyance management, tidal flood defences and embankments	No likely significant effect – the Tidal River Management Strategy for the Great Ouse is a plan that was published in 2009 and adopted in 2010. It covers the length of the Great Ouse from Kings Lynn in the north to Earith in the south and therefore includes the Ouse Washes SAC, SPA and Ramsar site. Ensuring the European site was not significantly adversely affected was a key element in devising the strategy. This measure is simply a commitment to continue with its ongoing delivery.
0200905053	Develop appropriate hydraulic models in the Fens and Lowlands to assist with future investment decisions, and develop a visualisation tool to indicate the level of risk and impact of flood risk management infrastructure	No likely significant effect – A commitment to hydraulic modelling will not affect European sites.
0200905052	Extend the flood risk baselining of knowledge, evidence, and carbon assessment in the Lincolnshire and Northamptonshire area to provide a baseline for development of the Future Fens Strategy	No likely significant effect – Developing an improved baseline will not affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0200905157	Undertake capital maintenance work as identified on the capital programme to river channels, sluices, embankments, and pumping stations, where viable, in the Great Ouse Fens to maintain the existing flood risk standard of service (following the tactical plans) and manage the risk of flooding	No likely significant effect, but down-the-line HRA required – The Great Ouse Fens covers a huge area from The Wash in the north to Cambridge in the south and from Peterborough in the west to Brandon in the east. Both Woodwalton Fen SAC and the Ouse Washes SAC/SPA/Ramsar site are flood alleviation areas within the Great Ouse Fens, although there is nothing in this measure that specifically commits to works near either European site. Depending on what would be involved, individual works could have effects on European sites but this measure only identifies that such schemes will be implemented if viable (adversely affecting the integrity of a European site would make them inviable) and in any event this measure is primarily a commitment to continue the ongoing strategic review process. Schemes will be subject to their own HRA as part of the down-the-line consenting process.
0202105012	Work in partnership to consider a whole catchment approach to progress delivery of the aims and objectives of the Steeping Catchment Action Plan in the Steeping catchment to reduce the risk of flooding and develop long-term resilience to the impacts of climate change and sea level rise	No likely significant effect - the south-east part of the area covered by this measure abuts Saltfleetby-Theddlethorpe Dunes & Gibraltar Point SAC and The Wash & North Norfolk Coast SPA/Ramsar, as well as the Greater Wash SPA. However, the Steeping Catchment Action Plan was adopted in 2020 and took account of potential effects on European sites. Moreover, the plan was concerned primarily with fluvial and surface water flooding rather than coastal flooding.
0200905054	Work in partnership with other Risk Management Authorities to develop a set of medium term tactical plans in the Fens and Lowlands to determine the level of maintenance and capital funding required for all flood risk assets and identify those areas where funding will be most challenging	No likely significant effect, but down-the-line HRA required – a commitment to develop a series of tactical plans for flood risk assets will not affect European sites. Individual proposals that fall out of those plans may require down-the-line HRA before they are consented and implemented but those proposals do not yet exist. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.

Measure ID	Measure	Likely Significant Effects on European sites
0200905177	Work in partnership with other organisations to continue to progress the Ouse Washes habitat creation project in the Great Ouse Fens to manage the impact of flooding on the Ouse Washes (Ramsar, Site of Special Scientific Interest, and Special Area of Conservation)	No likely significant effect – the purpose of this measure is positive for European sites
0200905185	Work in partnership with other organisations to review the Water Level Management Plan in the Ouse Washes to assess how water level requirements can be balanced between flood risk management and nature conservation in the Ouse Washes (Ramsar, Site of Special Scientific Interest, and Special Area of Conservation)	No likely significant effect – the purpose of this measure is positive for European sites
0200905137	Work to understand the contribution that the Great Fen Vision could make in the Fens to enhance flood resilience, and endeavour to implement viable opportunities	No likely significant effect – this measure simply concerns understanding how delivery of the existing Great Fens Vision could also enhance flood resilience
0200905055	Work with other Risk Management Authorities, representative bodies for farmers, and land managers in the Fens and Lowlands to start developing a long term strategic plan for managing future flood risk from all sources and will have identified the most appropriate flood risk options and adaptive approaches	No likely significant effect, but down-the-line HRA required – A commitment to developing a strategic plan will not affect European sites. Elements of the plan may do so and thus require down-the-line HRA before they were consented but the plan does not yet exist. In line with the guidance quoted in paragraph 2.25, down-the-line assessment will be required as further details emerge regarding what will be done to deliver this measure.
0200905056	Work with other bodies to provide evidence and advice to government from the strategic work in the Fens and Lowlands to inform suggested areas for policy review	No likely significant effect – Providing evidence and advice to government will not affect European sites

Table 44. Screening table showing the Test of Likely Significant Effects results for measures contained within the Anglian Flood Risk Management Plan applicable across the Oxford to Cambridge Arc Strategic Area - Straddles the Anglian and Thames Regions but is covered here as it is mainly in the Anglian Region

Measure ID	Measure	Likely Significant Effects on European sites
0200905181	Disseminate findings from the OxCam Flood Risk Investment Study in the Great Ouse catchment to provide an evidence base and advocacy tool to support decision makers to understand the optimum level and timing of investment in flood resilience under various growth and climate change scenarios	No likely significant effect – disseminating findings will not affect European sites
0203006091	Disseminate findings from the Oxcam Flood Risk Investment Study for investment in flood resilience and adaptation in Oxford to Cambridge Arc to provide an evidence base and advocacy tool to support decision makers to understand the optimum level and timing of investment in flood resilience under various growth and climate change scenarios	No likely significant effect – disseminating findings will not affect European sites
0206206012	Work in partnership including with the Environment Agency to monitor the implementation of the Ox Cam Property Flood Resilience Pathfinder in the Oxford to Cambridge Arc to gather feedback and inform future uptake of Property Flood Resilience measures	No likely significant effect – monitoring implementation will not affect European sites
0203006092	Work in partnership to provide evidence and advice in Oxford to Cambridge Arc to support infrastructure providers, other Government departments involved in development planning and the proposed Development Corporations in taking account of future flooding and coastal change in their infrastructure investment	No likely significant effect – a commitment to provide evidence and advice will not affect European sites
0200905183	Work in partnership to support the development of an Integrated Water Management plan in the Great Ouse catchment to provide a vision and implementation strategy that facilitates adaptive planning for water management, taking a catchment based systems-orientated approach	No likely significant effect – A commitment to support the development of an Integrated Water Management Plan in the Great Ouse catchment will not affect European sites. The Management Plan itself, once produced, will require HRA in line with legislative requirements.

Measure ID	Measure	Likely Significant Effects on European sites
0203006093	Work in partnership to support the development on an Integrated Water Management plan in Oxford to Cambridge Arc to provide a vision and implementation strategy that facilitates adaptive planning for water management, taking a catchment based systems-orientated approach	No likely significant effect – A commitment to support the development of an Integrated Water Management Plan will not affect European sites. The Management Plan itself, once produced, will require HRA in line with legislative requirements.
0200905141	Work in partnership with other Risk Management Authorities and develop design guides for each Development Corporation Area in the Great Ouse catchment to explore and demonstrate in detail how water can be an integrated part of the Development Corporation Area so that each makes space for water, enhances the natural habitats, ensures water is used wisely and offers multiple uses with innovative technology to implement net gain measures across the Great Ouse catchment	No likely significant effect – A commitment to work in partnership to produce design guides will not affect European sites.
0200905180	Work in partnership with other Risk Management Authorities, subject to a successful funding bid through the Innovative Resilience Fund, in the Great Ouse catchment to shape how each Development Corporation Area can explore and demonstrate in detail how water can be an integrated part so that each part of the Development Corporation Area enhances the natural habitats, ensures water is used wisely and offers multiple uses with innovative technology to implement net gain measures across the Great Ouse catchment	No likely significant effect – A commitment to shaping each Development Corporation Areas exploration of integrating water into planning to enhance natural habitats and ensure water is used wisely will not affect European sites.
0200905182	Work with partners to provide evidence and advice in the Great Ouse catchment to support infrastructure providers, other Government departments involved in development planning, and the proposed Development Corporations in taking account of future flooding and coastal change in their infrastructure investment	No likely significant effect – A commitment to provide evidence and advice will not affect European sites.

Measure ID	Measure	Likely Significant Effects on European sites
0206206010	Operate a Property Flood Resilience grant scheme to allow residents who have been affected by internal flooding to apply for funding in Buckinghamshire to install property level protection and resilience measures to adapt and increase the resilience of properties to flooding	No likely significant effect – A commitment to operate a grant scheme will not affect European sites and Buckinghamshire does not contain any hydrologically sensitive European sites in that the qualifying features of European sites in Buckinghamshire (Chilterns Beechwoods SAC and Aston Rowant SAC) depend upon freely draining substrates.

5. Other plans and projects

5.1 This section covers potential for effects in combination with other plans and projects. While the potential for the FRMP to occur 'in combination' with other FRMPs was considered for inclusion, each FRMP is specific to a relatively hydrologically self-contained River Basin District, meaning that potential for effects in combination with each other generally only exists where a European site straddles multiple RBDs. In this case the Humber Estuary SPA/Ramsar, the Greater Wash SPA, Outer Thames Estuary SPA and Margate & Long Sands SAC straddle the boundary between the Anglian FRMP and the Humber and South East FRMPs respectively. However, no mechanism has been identified for the actual measures in this FRMP (rather than any schemes that may emerge down-the-line) to operate in combination with those in the other FRMPs.

5.2 Natural England suggested inclusion of Diffuse Water Pollution Plans in the 'in combination' assessment of FRMP HRAs. Diffuse Water Pollution Plans are environmentally positive and intended to reduce diffuse pollution through fairly broad measures such as 'influencing management of farm infrastructure such as farm tracks, yards, buildings etc' through agri-environment schemes and similar. As such, no adverse likely significant effects or conflicts are expected to arise with the FRMP HRAs.

5.3 Potential in combination effects with Minerals and Waste Local Plans were also considered. However, Waste Local Plans are rarely technology-specific and potential impacts depend very much on the type of facility the market decides to bring forward on a given allocated site, or within a broad area of search where these exist. Minerals excavation can affect hydrologically sensitive European sites through dewatering for example. However, many minerals allocations are extensions to existing consented facilities to enable the site to be worked for longer (rather than to enable a net increase in consented extraction) and whose acceptability of effects on European sites are kept under review through the minerals planning authorities' Review of Consents process as required by the Conservation of Habitats and Species Regulations 2017 (as amended). In addition, many Minerals Plans include 'areas of search' for minerals rather than making specific allocations, leaving the market to bring forward proposals at the planning application level. As such, no specific likely significant effects in combination with the FRMP measures have been identified.

Local Plans

5.4 The delivery of c. 300,000 dwellings to 2030 across the Anglian area will result in the potential for a range of likely significant effects on the European sites surrounding the sub-region. Potential impact pathways include recreational pressure, a potential for increased atmospheric pollution from an increase in traffic

on the road network close to European sites, possible loss of functionally-linked habitat for SPAs (depending on where the development takes place) and water quality impacts on European sites. Depending on where construction takes place direct disturbance impacts on SPA birds could also occur.

5.5 This section focusses only on hydrologically sensitive European sites and on the main European sites where adverse effects from residential and employment development have been identified in Local Plan HRAs. In this RBD the hydrologically sensitive sites most at risk of being affected by housing and employment growth as set out in Local Plans are the string of coastal European sites. Much of the east coast is internationally designated from The Wash SPA/Ramsar and Wash & North Norfolk Coast SAC the north to Thames Estuary & Marshes SPA/Ramsar site in the south.

5.6 The Norfolk coast and Essex coast European sites in particular are known to be sensitive to increased recreational pressure resulting in harmful levels of overwintering waterfowl and wader disturbance and displacement and there are recreation mitigation strategies being developed for both clusters of European sites. In Norfolk this will also apply to Breckland SAC, SPA, Ramsar site which is an inland site with some hydrological sensitivity. Upper Nene Valley Gravel Pits SPA/Ramsar in Northamptonshire is also an inland wetland site identified in Local Plan assessments as being vulnerable to recreational pressure and for which a mitigation strategy has been devised.

5.7 The coastal SPAs are also vulnerable to losses as a result of development for housing and employment of inland functionally-linked habitat that are used by SPA birds for foraging and roosting at high tide and this also applies to some of the inland wetland sites, such as the Ouse Washes SAC/SPA/Ramsar, Nene Washes SAC/SPA/Ramsar and Upper Nene Valley Gravel Pits SPA/Ramsar. Most Local Plans in the coastal regions identify this issue and set out mitigation strategies for addressing them.

5.8 Another key anthropological pressure relating to European sites in the RBD is excessive nitrogen and/or phosphorus inputs, particularly from agriculture and also from treated sewage effluent. In advice to local planning authorities in March 2022 Natural England flagged that the following European sites of relevant to the RBD were suffering from excessive nutrients leading to eutrophication: The Broads SAC/Broadland SPA and the River Wensum SAC.

5.9 However, it is considered that the nature of the FRMP is such that no in combination effects will arise between adoption of the FRMP and delivery of housing and associated development across the sub-region. This is due either to the fact that the measures in the FRMP do not pose mechanisms to connect negatively to European sites, or because the measures of the FRMP are sufficiently high level (generally consisting of identifying a scheme and committing to its further development, design and implementation without committing to details) that they allow flexibility for measures necessary to be designed into schemes to protect

European sites to be incorporated at further planning tiers as each scheme is devised.

River Basin Management Plans

5.10 River Basin Management Plans (RBMPs) describe the challenges that threaten the water environment and how these challenges can be managed and funded. The Anglian FRMP covers the same area as the Anglian River Basin Management Plan.

5.11 The 2022 RBMP sets out a series of measures to bring about improvements in the waterbodies covered by the RBMP. By definition, the measures in the RBMP are positive and includes the following initiatives: partnership working with farmers and land managers, sustainable management of water resources, restoring rivers and removing man-made barriers to fish migration and controlling invasive non-native species.

5.12 The RBMPs generally include projects that improve the water environment, for example by:

- enhancing and restoring rivers and floodplains
- creating sustainable drainage
- cleaning up metal pollution
- improving habitats and water quality by addressing diffuse pollution issues
- adapting weirs to provide fish passage
- involving the community
- using existing regulations to tackle agricultural and rural land pollution, such as lagoon construction

5.13 Since the measures within RBMPs are positive and are often necessary to restore freshwater aquatic European sites to favourable condition, there is no mechanism for them to have a negative effect on European sites in combination with the measures in the FRMP.

Shoreline Management Plans and Local Flood Risk Management Plans

5.14 SMPs provide a policy context for shoreline/coastal zone management and development. As acknowledged throughout this document, SMPs and the Coastal Strategies that result from them often result in adverse effects on the integrity of European sites through a combination of coastal squeeze, loss of functionally-linked land for SPA/Ramsar birds, direct habitat loss due to defence footprint and changes to long-shore sediment transport and other aspects of natural sediment dynamics. They also present opportunities for positive effects on European sites if opportunities for managed realignment are included that will enable a more natural coastline to be established.

5.15 The following SMPs apply to the Anglian RBD were considered for in-combination impacts:

- SMP 4 Gibraltar Point to Hunstanton (The Wash)
- SMP 5 Hunstanton to Kelling Hard (North Norfolk)
- SMP 6 Kelling Hard to Lowestoft (Kelling to Lowestoft)
- SMP 7 Lowestoft to Felixstowe (Lowestoft Ness to Felixstowe Languard)
- SMP 8 Essex and South Suffolk

5.16 In addition to the above SMPs, the Thames Estuary 2100 Plan sets out how the Environment Agency and their partners can work together to manage tidal flood risk in the Thames Estuary. The Plan aims to: manage the risk of flooding to people, property and the environment, adapt to the challenges of climate change, ensure sustainable and resilient development in the floodplain, protect the social, cultural and commercial value of the tidal Thames, tributaries and floodplain and enhance and restore ecosystems and maximise benefits of natural floods.

5.17 The assessments for any potential in-combination impacts between these plans and the measures contained within the Anglian FRMP were considered with regards to spatial proximity and/or hydrological and/or hydrographical connectivity. No in-combination likely significant effects were identified in respect of the policies set out in the plans because the FRMP essentially draws upon measures in the SMP and subsequent Coastal Strategies for its measures in the coastal environment, and these are designed to be compatible with the Thames Estuary 2100 Strategy where relevant (i.e. in south Essex).

5.18 Similarly, Local Flood Risk Management Plan measures for relevant areas within the River Basin District have been included within the FRMP so there is no potential for in combination effects as the same measures are contained in both sets of plans.

Water Resource Management Plans

5.19 Anglian Water and Severn Trent Water have both produced Water Resource Management Plans. These set out the water supply strategy for their areas and could therefore have negative effects on European sites in their own right. For example, the River Wensum SAC is a major source of potable water.

5.20 However, Water Resource Management Plans are required to have their own HRAs undertaken. The HRAs for each of the latest adopted WRMPs considered whether their future supply strategy to meet water needs would affect European sites and it was concluded that the supply needs of their areas could be met without an adverse effect on the integrity of European sites, primarily through a combination of improved water efficiency measures and bringing new water supply areas into consideration that do not result in increased abstraction from European sites. As such, there would be no in combination effect with the FRMPs.

5.21 In addition to the WRMP, Anglian Water is also producing a Drainage and Wastewater Management Plan (DWMP). However, that plan has not yet been published and therefore cannot be included in this assessment.

Drought Plans, Permits and Orders

5.22 As discussed in the previous chapter, the Anglian RBD encompasses European sites that are sensitive to a wide range of anthropogenic pressures, including hydrology, water quality, recreational pressure, coastal squeeze and others. Multiple simultaneously acting impacting pathways can compound negative impacts on qualifying habitats and species.

5.23 For example, water companies, under their duty of delivering potable water to households and businesses, can apply for drought permits, enabling them to abstract water beyond existing abstraction consents for an agreed period of time. Granting of drought periods has the potential for negative environmental impacts, particularly in European sites that are already subject to existing unfavourable flow conditions or water levels, including the River Wensum SAC. While most measures included in the FRMP are likely to be positive for European sites by renaturalising hydrological function, inadequately planned or sited natural flood management and hard defence structures have the potential to negatively interact with Environment Agency Drought Orders and water company Drought Permits.

5.24 Drought conditions will also impose further pressures on designated sites such as by reducing water quality (reduced flows would typically result in higher nutrient concentrations, exacerbating the impact of treated sewage effluent) and water flow. In addition, climate change has the potential to increase the frequency and severity of drought conditions. Drought Plan Orders and Permits would compound drought issues and operate in-combination with impact pathways associated with the FRMP. However, drought plans will generally only operate at times of low water levels and low rainfall, which is the opposite scenario to when the majority of FRMP measures will be active.

5.25 Notwithstanding this, Drought Plans of water companies are subject to their own assessment process including HRA. This ensures that potential adverse effects on the integrity of European sites are adequately mitigated or, where this cannot be achieved, suitable compensation is provided. Overall, given that the Drought Plans of water companies undergo robust HRA appraisal, no in-combination effects with the FRMP will occur.

Environment Agency National Drought Plan

5.26 The potential for in-combination effects of the Anglian FRMP with the Environment Agency's National Drought Action Plan has been assessed and no in-combination impacts are anticipated. However, this should be considered further at the time of any potential implementation of drought management measures in liaison with the

Environment Agency, particularly regarding local actions in the supply and water source catchment areas utilised by Anglian Water and other water companies in the Anglian region. Moreover, drought plans will generally only operate at times of low water levels and low rainfall, which is the opposite scenario to when the majority of FRMP measures will be active.

Other Plans

5.27 The Broadland Futures Strategy is a partnership for future flood risk management in the Broadland area. The main goal is to agree a framework for future flood risk management that better copes with changing climate and rising sea level. The project is in its early stages but 'in combination' effects with the FRMP seem unlikely in that the FRMP essentially incorporates several measures associated with taking forward, or considering the implications of, the Broadland Futures Strategy study and the Broadland Futures Strategy, as identified earlier in this report, presents positive opportunities to manage the Broads in such a a way as to improve water levels and management.

5.28 The evolving Future Fens Flood Risk Management Strategy is a programme of activity that's been put in place to consider what the future flood risk management choices for the Great Ouse Fens might look like. With a third of the Fens currently below sea level, the area has a network of flood protection assets that are owned and managed by different organisations. Much of this infrastructure is nearing the end of its design life and will soon need significant investment. With the increasing effects of climate change, flood infrastructure is key in providing water resources, environmental, navigation and wider amenity services. The project is in its early stages but 'in combination' effects with the FRMP seem unlikely in that the FRMP essentially ties itself to the Future Fens project by including several measures committing to taking it forward.

Conclusion

5.29 In summary, is considered that the nature of the FRMP is such that no in combination effects will arise between adoption of the FRMP and delivery of housing and associated development across the sub-region. This is due either to the fact that the measures in the FRMP do not pose mechanisms to connect negatively to European sites, or because the measures of the FRMP are sufficiently high level (generally consisting of identifying a scheme and committing to its further development, design and implementation without committing to details) that they allow flexibility for measures necessary to be designed into schemes to protect European sites to be incorporated at further planning tiers as each scheme is devised.

6. Conclusion

6.1 All European sites have been screened out of further assessment. There are no likely significant effects on any European site as a result of the Anglian Flood Risk Management Plan 2021-2027, either alone or in combination with other projects and plans. This is due either to the fact that the measures in the FRMP do not pose mechanisms to connect negatively to European sites, or because the measures of the FRMP are sufficiently high level (generally consisting of identifying a scheme and committing to its further development, design and implementation without committing to details) that they allow flexibility for measures necessary to be designed into schemes to protect European sites to be incorporated at further planning tiers as each scheme is devised. It should be noted that notwithstanding references in the FRMP, scheme level HRAs will be undertaken as part of the business case for all schemes, and many schemes will also need planning consent, which will also be accompanied by an HRA, thus ensuring legal requirements are met.

Appendix A Information on European Sites

A.1 Breckland SAC

Conservation Objectives

6.2 With regard to the SAC[31] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

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

- the extent and distribution of qualifying natural habitats and habitats of qualifying species
- the structure and function (including typical species) of qualifying natural habitats
- the structure and function of the habitats of qualifying species
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

Qualifying Features

- Inland dunes with open *Corynephorus* and *Agrostis* grasslands; Open grassland with grey-hair grass and common bent grass of inland dunes
- Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation; Naturally nutrient-rich lakes or lochs which are often dominated by pondweed
- European dry heaths
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*); Dry grasslands and scrublands on chalk or limestone
- Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae); Alder woodland on floodplains
- Great crested newt *Triturus cristatus*

Environmental Vulnerabilities

6.4 With regards to this SAC[32] and others included within the Breckland 2015 SIP the following are threats and pressure listed for those sites:

- lack of ground disturbance
- undergrazing
- forestry and woodland management

- water pollution
- changes in species distributions
- stone curlew monitoring and intervention
- planning permission: general
- monitoring
- air pollution: impact of atmospheric nitrogen deposition
- public access/disturbance
- climate change
- inappropriate scrub control
- inappropriate management practices
- habitat fragmentation
- inappropriate weed control
- inappropriate pest control
- inappropriate cutting/mowing

6.5 The 2019 Supplementary Advice to the Conservation Objectives[33] (SACO) goes into more detail on these vulnerabilities.

A.2 Deben Estuary SPA/Ramsar site

Conservation Objectives

6.6 With regard to the SPA[34] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.7 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

Qualifying Features

6.8 With regards to the SPA the following are reasons for designation:

- Dark-bellied brent goose *Branta bernicla* (Non-breeding)
- Pied avocet *Recurvirostra avosetta* (Non-breeding)

6.9 With regards to the Ramsar[35] the following are reasons for designation:

Ramsar Criterion 2

6.10 Supports a population of the mollusc *Vertigo angustior* (Habitats Directive Annex II (S1014); British Red Data Book Endangered). Martlesham Creek is one of only about fourteen sites in Britain where this species survives

6.11 Ramsar Criterion 6 – species/populations occurring at levels of international importance.

6.12 Species with peak counts in winter:

- Dark-bellied brent goose, Branta bernicla – 1953 individuals, representing an average of 1.9% of the GB population

Environmental Vulnerabilities

6.13 With regards to this SPA's SIP[36] the following are threats and pressure listed for the site:

- coastal squeeze
- public access/disturbance
- changes in species distributions
- air pollution: risk of atmospheric nitrogen deposition
- water pollution
- fisheries: commercial marine and estuarine

6.14 The 2019 Supplementary Advice to the Conservation Objectives[37] (SACO) goes into more detail on these vulnerabilities.

A.3 Dew's Pond SAC

Conservation Objectives

6.15 With regard to this SAC[38] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.16 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 the habitats of qualifying species
- the structure and function of the habitats of qualifying species
- the supporting processes on which the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

Qualifying Features

- Great crested newt *Triturus cristatus*

Environmental Vulnerabilities

6.17 With regards to this SAC's SIP[39] the following are threats and pressure listed for the site:

- There are no Issues identified for this site.

6.18 The 2015 Supplementary Advice to the Conservation Objectives[40] (SACO) goes into more detail on these vulnerabilities.

A.4 Stour & Orwell Estuaries SPA and Ramsar

Conservation Objectives

6.19 With regard to the SPA[41] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.20 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

Qualifying Features

6.21 With regards to the SPA the following are reasons for designation:

- Dark-bellied brent goose Branta bernicla bernicla (Non-breeding)
- Northern pintail Anas acuta (Non-breeding)
- Pied avocet Recurvirostra avosetta (Breeding)
- Grey plover Pluvialis squatarola (Non-breeding)
- Red knot Calidris canutus (Non-breeding)
- Dunlin Calidris alpina alpina (Non-breeding)
- Black-tailed godwit Limosa limosa islandica (Non-breeding)
- Common redshank Tringa totanus (Non-breeding)

6.22 With regards to the Ramsar[42] the following are reasons for designation:

Ramsar Criterion 2

6.23 Contains seven nationally scarce plants: stiff saltmarsh-grass *Puccinellia rupestris*; small cord-grass *Spartina maritima*; perennial glasswort *Sarcocornia perennis*; lax-flowered sea lavender *Limonium humile*; and the eelgrasses *Zostera angustifolia*, *Z. marina* and *Z. noltei*.

6.24 Contains five British Red Data Book invertebrates: the muscid fly *Phaonia fusca*; the horsefly *Haematopota grandis*; two spiders, *Arctosa fulvolineata* and *Baryphema duffeyi*; and the Endangered swollen spire snail *Mercuria confusa*.

Ramsar Criterion 5

6.25 Assemblages of international importance:

- species with peak counts in winter: 63017 waterfowl

Ramsar Criterion 6 – species/populations occurring at levels of international importance.

6.26 Species with peak counts in spring/autumn:

- Common redshank, Tringa totanus tetanus – 2588 individuals, representing an average of 2% of the population

6.27 Species with peak counts in winter:

- Dark-bellied brent goose, *Branta bernicla* – 2627 individuals, representing an average of 1.2% of the population
- Northern pintail, *Anas acuta*, NW Europe – 741 individuals, representing an average of 1.2% of the population
- Grey plover, *Pluvialis squatarola*, E Atlantic/W Africa -wintering – 3261 individuals, representing an average of 1.3% of the population
- Red knot, *Calidris canutus islandica*, W & Southern Africa (wintering) – 5970 individuals, representing an average of 1.3% of the population
- Dunlin, *Calidris alpina alpina*, W Siberia/W Europe 19114 individuals, representing an average of 1.4% of the population
- Black-tailed godwit, *Limosa limosa islandica*, Iceland/W Europe – 2559 individuals, representing an average of 7.3% of the population
- Common redshank, *Tringa totanus tetanus* – 3687 individuals, representing an average of 2.8% of the population

Environmental Vulnerabilities

6.28 With regards to this SPA's SIP[43] the following are threats and pressure listed for the site:

- coastal squeeze
- public access/disturbance
- changes in species distributions
- invasive species
- planning permission: general
- air pollution: impact of atmospheric nitrogen deposition
- inappropriate coastal management
- fisheries: commercial marine and estuarine

6.29 The 2019 Supplementary Advice to the Conservation Objectives[44] (SACO) goes into more detail on these vulnerabilities.

A.5 Upper Nene Valley Gravel Pits SPA and Ramsar

Conservation Objectives

6.30 With regard to the SPA[45] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.31 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

Qualifying Features

6.32 With regards to the SPA the following are reasons for designation:

- Great bittern *Botaurus stellaris* (Non-breeding)
- Gadwall *Anas strepera* (Non-breeding)
- European golden plover *Pluvialis apricaria* (Non-breeding)

6.33 With regards to the Ramsar[46] the following are reasons for designation:

Ramsar Criterion 5

6.34 The site qualifies under Criterion 5 because it regularly supports 20,000 or more waterbirds:

- in the non-breeding season - the site regularly supports 23,821 individual waterbirds

Ramsar Criterion 6

6.35 The site qualifies under Criterion 6 because it regularly supports 1% of the individuals in the populations of the following species or subspecies of waterbird in any season:

- Mute swan Cygnus olor – 629 individuals wintering
- Gadwall Anas strepera – 773 individuals wintering

Environmental Vulnerabilities

6.36 With regards to this SPA's SIP[47] the following are threats and pressure listed for the site:

- public access/disturbance
- planning permission: general

- fisheries: freshwater
- change in land management

6.37 The 2017 Supplementary Advice to the Conservation Objectives[48] (SACO) goes into more detail on these vulnerabilities.

A.6 Portholme SAC

Conservation Objectives

6.38 With regard to the SAC[49] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.39 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

Qualifying Features

- Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)

Environmental Vulnerabilities

6.40 With regards to this SAC's SIP[50] the following are threats and pressure listed for the site:

- inappropriate water levels
- water pollution

6.41 The 2019 Supplementary Advice to the Conservation Objectives[51] (SACO) goes into more detail on these vulnerabilities.

A.7 Fenland SAC and Wicken Fen Ramsar, Chippenham Fen Ramsar and Woodwalton Fen Ramsar

Conservation Objectives

6.42 With regard to the SAC[52] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

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

- the extent and distribution of qualifying natural habitats and habitats of qualifying species
- the structure and function (including typical species) of qualifying natural habitats
- the structure and function of the habitats of qualifying species
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

Qualifying Features

6.44 With regards to the SAC the following are reasons for designation:

- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae);* Purple moor-grass meadows
- Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*; Calcium-rich fen dominated by great fen sedge (saw sedge)
- Spined loach Cobitis taenia
- Great crested newt *Triturus cristatus*

6.45 With regards to the Wicken Fen Ramsar[53] the following are reasons for designation:

Ramsar Criterion 1

6.46 One of the most outstanding remnants of the East Anglian peat fens. The area is one of the few which has not been drained. Traditional management has created a mosaic of habitats from open water to sedge and litter fields.

Ramsar Criterion 2

6.47 The site supports one species of British Red Data Book plant, fen violet Viola persicifolia, which survives at only two other sites in Britain. It also contains eight nationally scarce plants and 121 British Red Data Book invertebrates.

6.48 With regards to the Chippenham Fen Ramsar[54] the following are reasons for designation:

Ramsar Criterion 1

6.49 A spring-fed calcareous basin mire with a long history of management, which is partly reflected in the diversity of present-day vegetation.

Ramsar Criterion 2

6.50 The invertebrate fauna is very rich, partly due to its transitional position between Fenland and Breckland. The species list is very long, including many rare and scarce invertebrates characteristic of ancient fenland sites in Britain.

Ramsar Criterion 3

6.51 The site supports diverse vegetation types, rare and scarce plants. The site is the stronghold of Cambridge milk parsley *Selinum carvifolia*.

6.52 With regards to the Woodwalton Fen Ramsar[55] the following are reasons for designation:

Ramsar Criterion 1

6.53 The site is within an area that is one of the remaining parts of East Anglia which has not been drained. The fen is near natural and has developed where peat-digging took place in the 19th century. The site has several types of open fen and swamp communities.

Ramsar Criterion 2

6.54 The site supports two species of British Red Data Book plants, fen violet, *Viola persicifolia* and fen wood-rush *Luzula pallidula*. Woodwalton also supports a large number of wetland invertebrates including 20 British Red Data Book species. Aquatic beetles, flies and moths are particularly well represented.

Environmental Vulnerabilities

6.55 With regards to this SAC's SIP[56] the following are threats and pressure listed for the site:

- water pollution
- hydrological changes
- water pollution
- hydrological changes
- air pollution: impact of atmospheric nitrogen deposition

6.56 The 2019 Supplementary Advice to the Conservation Objectives[57] (SACO) goes into more detail on these vulnerabilities.

A.8 Orton Pit SAC

Conservation Objectives

6.57 With regard to the SAC[58] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

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

- the extent and distribution of qualifying natural habitats and habitats of qualifying species
- the structure and function (including typical species) of qualifying natural habitats
- the structure and function of the habitats of qualifying species

- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

Qualifying Features

- Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.; Calcium-rich nutrient-poor lakes, lochs and pools
- Great crested newt *Triturus cristatus*

Environmental Vulnerabilities

6.59 With regards to this SAC's SIP[59] the following are threats and pressure listed for the site:

- predation
- inappropriate scrub control
- inappropriate weed control
- direct impact from 3rd party
- disease

6.60 The 2019 Supplementary Advice to the Conservation Objectives[60] (SACO) goes into more detail on these vulnerabilities.

A.9 Ouse Washes SAC

Conservation Objectives

6.61 With regard to the SAC[61] and natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.62 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 the habitats of qualifying species
- the structure and function of the habitats of qualifying species
- the supporting processes on which the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

Qualifying Features

- Spined loach Cobitis taenia

Environmental Vulnerabilities

6.63 With regards to this SAC and others included within the Ouse Washes 2014 SIP[62] the following are threats and pressure listed for those sites:

- inappropriate water levels
- water pollution

6.64 The 2015 Supplementary Advice to the Conservation Objectives[63] (SACO) goes into more detail on these vulnerabilities.

A.10 Ouse Washes SPA and Ramsar

Conservation Objectives

6.65 With regard to the SPA[64] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.66 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

Qualifying Features

6.67 With regards to the SPA the following are reasons for designation:

- Bewick's swan *Cygnus columbianus bewickii* (Non-breeding)
- Whooper swan *Cygnus cygnus* (Non-breeding)
- Eurasian wigeon *Anas penelope* (Non-breeding)
- Gadwall *Anas strepera* (Breeding)
- Eurasian teal *Anas crecca* (Non-breeding)
- Mallard *Anas platyrhynchos* (Breeding)
- Northern pintail *Anas acuta* (Non-breeding)
- Garganey *Anas querquedula* (Breeding)
- Northern shoveler *Anas clypeata* (Non-breeding)
- Northern shoveler *Anas clypeata* (Breeding)
- Hen harrier *Circus cyaneus* (Non-breeding)
- Ruff Philomachus pugnax (Breeding)
- Black-tailed godwit *Limosa limosa limosa* (Breeding)

6.68 With regards to the Ouse Washes Ramsar[65] the following are reasons for designation:

Ramsar Criterion 1

6.69 The site is one of the most extensive areas of seasonally-flooding washland of its type in Britain.

Ramsar Criterion 2

6.70 The site supports several nationally scarce plants, including small water pepper Polygonum minus, whorled water-milfoil *Myriophyllum verticillatum*, greater water parsnip *Sium latifolium*, river water-dropwort *Oenanthe fluviatilis*, fringed water-lily *Nymphoides peltata*, long-stalked pondweed *Potamogeton praelongus*, hair-like pondweed *Potamogeton trichoides*, grass-wrack pondweed *Potamogeton compressus*, tasteless water-pepper *Polygonum mite* and marsh dock *Rumex palustris*. Invertebrate records indicate that the site holds relict fenland fauna, including the British Red Data Book species large darter dragonfly *Libellula fulva* and the rifle beetle *Oulimnius major*. The site also supports a diverse assemblage of nationally rare breeding waterfowl associated with seasonally-flooding wet grassland.

Ramsar Criterion 5

6.71 Assemblages of international importance:

- Species with peak counts in winter: 59133 waterfowl

Ramsar Criterion 6 – species/populations occurring at levels of international importance.

6.72 Qualifying Species/populations (as identified at designation):

6.73 Species with peak counts in winter:

- Tundra swan, *Cygnus columbianus bewickii*, NW Europe – 1140 individuals, representing an average of 3.9% of the population
- Whooper swan, *Cygnus cygnus*, Iceland/UK/Ireland – 653 individuals, representing an average of 3.1% of the population
- Eurasian wigeon, *Anas penelope*, NW Europe – 22630 individuals, representing an average of 1.5% of the population
- Gadwall, *Anas strepera strepera*, NW Europe – 438 individuals, representing an average of 2.5% of the GB population
- Eurasian teal, *Anas crecca*, NW Europe – 3384 individuals, representing an average of 1.7% of the GB population
- Northern pintail, *Anas acuta*, NW Europe – 2108 individuals, representing an average of 3.5% of the population
- Northern shoveler, *Anas clypeata*, NW & C Europe – 627 individuals, representing an average of 1.5% of the population

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

- Species with peak counts in winter:

- Mute swan, *Cygnus olor*, Britain – 722 individuals, representing an average of 1.9% of the population
- Common pochard, *Aythya ferina*, NE & NW – 4678 individuals, representing an average of 1.3% of the population
- Black-tailed godwit, *Limosa limosa islandica*, Iceland/W Europe – 2647 individuals, representing an average of 7.5% of the population

Environmental Vulnerabilities

6.75 With regards to this SPA and others included within the Ouse Washes 2014 SIP[66] the following are threats and pressure listed for those sites:

- inappropriate water levels
- water pollution

6.76 The 2019 Supplementary Advice to the Conservation Objectives[67] (SACO) goes into more detail on these vulnerabilities.

A.11 Nene Washes SAC

Conservation Objectives

6.77 With regard to the SAC[68] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.78 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 the habitats of qualifying species
- the structure and function of the habitats of qualifying species
- the supporting processes on which the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

Qualifying Features

- Spined loach Cobitis taenia

Environmental Vulnerabilities

6.79 With regards to this SAC and others included within the Nene Washes 2014 SIP[69] the following are threats and pressure listed for those sites:

- hydrological changes
- water pollution

6.80 The 2019 Supplementary Advice to the Conservation Objectives[70] (SACO) goes into more detail on these vulnerabilities.

A.12 Nene Washes SPA and Ramsar

Conservation Objectives

6.81 With regard to the SPA[71] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.82 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

Qualifying Features

6.83 With regards to the SPA the following are reasons for designation:

- Bewick's swan *Cygnus columbianus bewickii* (Non-breeding)
- Eurasian wigeon *Anas penelope* (Non-breeding)
- Gadwall *Anas strepera* (Breeding)
- Gadwall *Anas strepera* (Non-breeding)
- Eurasian teal *Anas crecca* (Non-breeding)
- Northern pintail *Anas acuta* (Non-breeding)
- Garganey *Anas querquedula* (Breeding)
- Northern shoveler *Anas clypeata* (Non-breeding)
- Northern shoveler *Anas clypeata* (Breeding)
- Black-tailed godwit *Limosa limosa limosa* (Breeding)

6.84 With regards to the Nene Washes Ramsar[72] the following are reasons for designation:

Ramsar Criterion 2

6.85 The site supports an important assemblage of nationally rare breeding birds. In addition, a wide range of raptors occur through the year. The site also supports several nationally scarce plants, and two vulnerable and two rare British Red Data Book invertebrate species have been recorded.

Ramsar Criterion 6 – species/populations occurring at levels of international importance.

6.86 Qualifying Species/populations (as identified at designation):

6.87 Species with peak counts in winter:

- Tundra swan, *Cygnus columbianus bewickii*, NW Europe – 694 individuals, representing an average of 2.3% of the population

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

6.89 Species with peak counts in spring/autumn:

- Black-tailed godwit, *Limosa limosa islandica*, Iceland/W Europe – 482 individuals, representing an average of 1.3% of the population

6.90 Species with peak counts in winter:

- Northern pintail, *Anas acuta*, NW Europe – 1848 individuals, representing an average of 3% of the population

Environmental Vulnerabilities

6.91 With regards to this SPA and others included within the Nene Washes 2014 SIP[73] the following are threats and pressure listed for those sites:

- hydrological changes
- water pollution

6.92 The 2019 Supplementary Advice to the Conservation Objectives[74] (SACO) goes into more detail on these vulnerabilities.

A.13 Norfolk Valley Fens SAC

Conservation Objectives

6.93 With regard to the SAC[75] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

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

- the extent and distribution of qualifying natural habitats and habitats of qualifying species
- the structure and function (including typical species) of qualifying natural habitats
- the structure and function of the habitats of qualifying species
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

Qualifying Features

- Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath
- European dry heaths
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*); Dry grasslands and scrublands on chalk or limestone
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*); Purple moor-grass meadows
- Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*; Calcium-rich fen dominated by great fen sedge (saw sedge)
- Alkaline fens; Calcium-rich springwater-fed fens
- Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae); Alder woodland on floodplains
- Narrow-mouthed whorl snail *Vertigo angustior*
- Desmoulin`s whorl snail *Vertigo moulinsiana*

Environmental Vulnerabilities

6.95 With regards to this SAC's SIP[76] the following are threats and pressure listed for the site:

- inappropriate water levels
- inappropriate scrub levels
- hydrological changes
- water pollution
- inappropriate cutting/mowing
- water abstraction
- undergrazing
- overgrazing
- invasive species
- change in land management
- changes in species distributions
- air pollution: impact of atmospheric nitrogen deposition

6.96 The 2019 Supplementary Advice to the Conservation Objectives[77] (SACO) goes into more detail on these vulnerabilities.

A.14 Waveney & Little Ouse Valley Fens SAC and Redgrave & South Lopham Fens Ramsar

Conservation Objectives

6.97 With regard to the SAC[78] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

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

- the extent and distribution of qualifying natural habitats and habitats of qualifying species
- the structure and function (including typical species) of qualifying natural habitats
- the structure and function of the habitats of qualifying species
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

Qualifying Features

6.99 With regards to the SAC the following are reasons for designation:

- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*); Purple moor-grass meadows
- Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*; Calcium-rich fen dominated by great fen sedge (saw sedge)
- Desmoulin`s whorl snail Vertigo moulinsiana

6.100 With regards to the Redgrave & South Lopham Fens Ramsar[79] the following are reasons for designation:

Ramsar Criterion 1

6.101 The site is an extensive example of spring-fed lowland base-rich valley, remarkable for its lack of fragmentation.

Ramsar Criterion 2

6.102 The site supports many rare and scarce invertebrates, including a population of the fen raft spider *Dolomedes plantarius*.

Ramsar Criterion 3

6.103 The site supports many rare and scarce invertebrates, including a population of the fen raft spider *Dolomedes plantarius*. The diversity of the site is due to the lateral and longitudinal zonation of the vegetation types characteristic of valley mires.

Environmental Vulnerabilities

6.104 With regards to this SAC's SIP[80] the following are threats and pressure listed for the site:

- inappropriate scrub control
- inappropriate water levels
- air pollution: impact of atmospheric nitrogen deposition

- water pollution

6.105 The 2019 Supplementary Advice to the Conservation Objectives[81] (SACO) goes into more detail on these vulnerabilities.

A.15 River Wensum SAC

Conservation Objectives

6.106 With regard to the SAC[82] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change:

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

- the extent and distribution of qualifying natural habitats and habitats of qualifying species
- the structure and function (including typical species) of qualifying natural habitats
- the structure and function of the habitats of qualifying species
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

Qualifying Features

- Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation; Rivers with floating vegetation often dominated by water-crowfoot
- Desmoulin`s whorl snail *Vertigo moulinsiana*
- White-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes*
- Brook lamprey Lampetra planeri
- Bullhead Cottus gobio

Environmental Vulnerabilities

6.108 With regards to this SAC's SIP[83] the following are threats and pressure listed for the site:

- physical modification
- inappropriate weirs, dams, and other structures
- siltation
- invasive species
- water pollution
- water abstraction

6.109 The 2019 Supplementary Advice to the Conservation Objectives[84] (SACO) goes into more detail on these vulnerabilities.

A.16 The Broads SAC

Conservation Objectives

6.110 With regard to the SAC[85] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

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

- the extent and distribution of qualifying natural habitats and habitats of qualifying species
- the structure and function (including typical species) of qualifying natural habitats
- the structure and function of the habitats of qualifying species
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

Qualifying Features

- Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.; Calcium-rich nutrient-poor lakes, lochs and pools
- Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation; Naturally nutrient-rich lakes or lochs which are often dominated by pondweed
- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*); Purple moor-grass meadows
- Transition mires and quaking bogs; Very wet mires often identified by an unstable `quaking` surface
- Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*; Calcium-rich fen dominated by great fen sedge (saw sedge)
- Alkaline fens; Calcium-rich springwater-fed fens
- Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae); Alder woodland on floodplains
- Desmoulin`s whorl snail *Vertigo moulinsiana*
- Otter Lutra lutra
- Fen orchid Liparis loeselii
- Little whorlpool ram's-horn snail *Anisus vorticulus*

Environmental Vulnerabilities

6.112 With regards to this SAC and others included within the Broadland 2018 SIP[86] the following are threats and pressure listed for those sites:

- water pollution
- climate change
- invasive species
- siltation
- inappropriate water levels
- hydrological changes
- water abstraction
- change in land management
- inappropriate ditch management
- inappropriate scrub control
- changes in species distributions
- public access/disturbance
- undergraing
- drainage
- direct impact from third party
- inappropriate coastal management
- air pollution: impact of atmospheric nitrogen deposition

6.113 The 2019 Supplementary Advice to the Conservation Objectives[87] (SACO) goes into more detail on these vulnerabilities.

A.17 Broadland SPA and Ramsar

Conservation Objectives

6.114 With regard to the SPA[88] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.115 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

Qualifying Features

6.116 With regards to the SPA the following are reasons for designation:

- Botaurus stellaris; Great bittern (Breeding)
- Bewick's swan Cygnus columbianus bewickii; (Non-breeding)
- Whooper swan Cygnus cygnus; (Non-breeding)
- Eurasian wigeon Anas penelope; (Non-breeding)
- Gadwall Anas strepera; (Non-breeding)
- Northern shoveler Anas clypeata; (Non-breeding)
- Eurasian marsh harrier Circus aeruginosus; (Breeding)
- Hen harrier Circus cyaneus; (Non-breeding)
- Ruff Philomachus pugnax; (Non-breeding)

6.117 With regards to the Broadland Ramsar[89] the following are reasons for designation:

Ramsar Criterion 2

6.118 The site supports a number of rare species and habitats within the biogeographical zone context, including the following Habitats Directive Annex I features:

- Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* Calcium-rich fen dominated by great fen sedge (saw sedge).
- Alkaline fens Calcium-rich springwater-fed fens.
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) Alder woodland on floodplains, and the Annex II species
- Desmoulin`s whorl snail *Vertigo moulinsiana*
- Otter Lutra lutra
- Fen orchid Liparis loeselii

Ramsar Criterion 6 – species/populations occurring at levels of international importance.

6.119 Qualifying Species/populations (as identified at designation):

6.120 Species with peak counts in winter:

- Tundra swan, Cygnus columbianus bewickii, NW Europe – 196 individuals, representing an average of 2.4% of the GB population
- Eurasian wigeon, Anas penelope, NW Europe – 6769 individuals, representing an average of 1.6% of the GB population
- Gadwall, Anas strepera strepera, NW Europe – 545 individuals, representing an average of 3.1% of the GB population
- Northern shoveler, Anas clypeata, NW & C Europe – 247 individuals, representing an average of 1.6% of the GB population

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

6.122 Species with peak counts in winter:

- Pink-footed goose, Anser brachyrhynchus, Greenland, Iceland/UK – 4263 individuals, representing an average of 1.7% of the population

- Greylag goose, Anser anser anser, Iceland/UK, Ireland – 1007 individuals, representing an average of 1.1% of the population

Environmental Vulnerabilities

6.123 With regards to this SPA and others included within the Broadland 2018 SIP[90] the following are threats and pressure listed for those sites:

- water pollution
- climate change
- invasive species
- siltation
- inappropriate water levels
- hydrological changes
- water abstraction
- change in land management
- inappropriate ditch management
- inappropriate scrub control
- changes in species distributions
- public access/disturbance
- undergrazing
- drainage
- direct impact from third party
- inappropriate coastal management
- air pollution: impact of atmospheric nitrogen deposition

6.124 The 2019 Supplementary Advice to the Conservation Objectives[91] (SACO) goes into more detail on these vulnerabilities.

A.18 Roydon Common & Dersingham Bog SAC, Roydon Common Ramsar and Dersingham Bog Ramsar

Conservation Objectives

6.125 With regard to the SAC[92] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.126 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

Qualifying Features

6.127 With regards to the SAC the following are reasons for designation:

- Northern Atlantic wet heaths with *Erica tetralix*; Wet heathland with cross-leaved heath
- European dry heaths
- Depressions on peat substrates of the *Rhynchosporion*

6.128 With regards to the Roydon Common Ramsar[93] the following are reasons for designation:

Ramsar Criterion 1

6.129 The site is the most extensive example of valley mire-heathland biotope within East Anglia. –It is a mixed valley mire holding vegetation communities which reflect the influence of both base-poor and base-rich water.

Ramsar Criterion 3

6.130 The vegetation communities have a restricted distribution within Britain. – It also supports a number of acidophilic invertebrates outside their normal geographic range and six British Red Data Book invertebrates.

6.131 With regards to the Dersingham Bog Ramsar[94] the following are reasons for designation:

Ramsar Criterion 2

6.132 Supports an important assemblage of invertebrates - nine British Red Data Book species have been recorded.

Environmental Vulnerabilities

6.133 With regards to this SAC's SIP[95] the following are threats and pressure listed for the site:

- hydrological changes
- inappropriate ditch management
- air pollution: risk of atmospheric nitrogen deposition
- changes in species distributions
- undergrazing
- water pollution

6.134 The 2019 Supplementary Advice to the Conservation Objectives[96] (SACO) goes into more detail on these vulnerabilities.

A.19 Baston Fen SAC

Conservation Objectives

6.135 With regard to the SAC[97] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.136 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 the habitats of qualifying species
- the structure and function of the habitats of qualifying species
- the supporting processes on which the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

Qualifying Features

- Spined loach Cobitis taenia

Environmental Vulnerabilities

6.137 With regards to this SAC's SIP[98] the following are threats and pressure listed for the site:

- siltation
- changes in species distributions

6.138 The 2019 Supplementary Advice to the Conservation Objectives[99] (SACO) goes into more detail on these vulnerabilities.

A.20 Breydon Water SPA and Ramsar

Conservation Objectives

6.139 With regard to the SPA[100] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change

6.140 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

Qualifying Features

6.141 With regards to the SPA the following are reasons for designation:

- Bewick's swan *Cygnus columbianus bewickii* (Non-breeding)
- Pied avocet *Recurvirostra avosetta* (Non-breeding)
- European golden plover *Pluvialis apricaria* (Non-breeding)
- Northern lapwing *Vanellus vanellus* (Non-breeding)
- Ruff *Philomachus pugnax* (Non-breeding)
- Common tern *Sterna hirundo* (Breeding)

6.142 With regards to the Breydon Water Ramsar[101] the following are reasons for designation:

Ramsar Criterion 5

6.143 Assemblages of international importance:

6.144 Species with peak counts in winter:

- 68175 waterfowl

Ramsar Criterion 6 – species/populations occurring at levels of international importance.

6.145 Qualifying Species/populations (as identified at designation):

6.146 Species with peak counts in winter:

- Tundra swan, *Cygnus columbianus bewickii*, NW Europe – 171 individuals, representing an average of 2.1% of the GB population
- Northern lapwing, *Vanellus vanellus*, Europe - breeding – 20142 individuals, representing an average of 1.3% of the GB population
- Species/populations identified subsequent to designation for possible future consideration under criterion 6:
- Species with peak counts in winter:
- Pink-footed goose, *Anser brachyrhynchus*, Greenland, Iceland/UK – 5816 individuals, representing an average of 2.4% of the population
- Eurasian wigeon, *Anas penelope*, NW Europe – 15624 individuals, representing an average of 1% of the population
- Northern shoveler, *Anas clypeata*, NW & C Europe – 478 individuals, representing an average of 1.1% of the population
- European golden plover, *Pluvialis apricaria apricaria*, P. a. altifrons Iceland & Faroes/E Atlantic – 10656 individuals, representing an average of 1.1% of the population
- Black-tailed godwit, *Limosa limosa islandica*, Iceland/W Europe – 1100 individuals, representing an average of 3.1% of the population

Environmental Vulnerabilities

6.147 With regards to this SPA's SIP[102] the following are threats and pressure listed for the site:

- shooting/scaring
- change in land management
- public access/disturbance
- hydrological changes
- fisheries: commercial marine and estuarine

6.148 The 2019 Supplementary Advice to the Conservation Objectives[103] (SACO) goes into more detail on these vulnerabilities.

A.21 The Wash & North Norfolk Coast SAC

Conservation Objectives

6.149 With regard to the SAC[104] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

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

- the extent and distribution of qualifying natural habitats and habitats of qualifying species
- the structure and function (including typical species) of qualifying natural habitats
- the structure and function of the habitats of qualifying species
- the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- the populations of qualifying species
- the distribution of qualifying species within the site

Qualifying Features

- Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks
- Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats
- Coastal lagoons
- Large shallow inlets and bays
- Reefs
- Salicornia and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand
- Atlantic salt meadows (Glauco-Puccinellietalia maritimae)

- Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*); Mediterranean saltmarsh scrub
- Otter Lutra lutra
- Common seal Phoca vitulina

Environmental Vulnerabilities

6.151 With regards to the Wash and North Norfolk Coast 2014 SIP[105] the following are threats and pressure listed for these sites:

- inappropriate water levels
- public access/disturbance
- siltation
- fisheries: recreational marine and estuarine
- invasive species
- inappropriate coastal management
- fisheries: commercial marine and estuarine
- predation
- coastal squeeze
- change in land management
- air pollution: impact of atmospheric nitrogen deposition
- changes in species distributions

6.152 The 2019 Supplementary Advice to the Conservation Objectives[106] (SACO) goes into more detail on these vulnerabilities.

A.22 North Norfolk Coast SPA

Conservation Objectives

6.153 With regard to the North Norfolk Coast SPA[107] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.154 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

Qualifying Features

- Great bittern *Botaurus stellaris* (Breeding)

- Pink-footed goose *Anser brachyrhynchus* (Non-breeding)
- Dark-bellied brent goose *Branta bernicla bernicla* (Non-breeding)
- Eurasian wigeon *Anas penelope* (Non-breeding)
- Eurasian marsh harrier *Circus aeruginosus* (Breeding)
- Montagu's harrier *Circus pygargus* (Breeding)
- Pied avocet *Recurvirostra avosetta* (Breeding)
- Red knot *Calidris canutus* (Non-breeding)
- Sandwich tern *Sterna sandvicensis* (Breeding)
- Common tern *Sterna hirundo* (Breeding)
- Little tern *Sterna albifrons* (Breeding)

Environmental Vulnerabilities

6.155 With regards to the Wash and North Norfolk Coast 2014 SIP[108] the following are threats and pressure listed for these sites:

- inappropriate water levels
- public access/disturbance
- siltation
- fisheries: recreational marine and estuarine
- invasive species
- inappropriate coastal management
- fisheries: commercial marine and estuarine
- predation
- coastal squeeze
- change in land management
- air pollution: impact of atmospheric nitrogen deposition
- changes in species distributions

6.156 The 2019 Supplementary Advice to the Conservation Objectives[109] (SACO) goes into more detail on these vulnerabilities.

A.23 The Wash SPA and Ramsar

Conservation Objectives

6.157 With regard to the SPA[110] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.158 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

Qualifying Features

6.159 With regards to The Wash SPA the following are reasons for designation:

- Bewick's swan *Cygnus columbianus bewickii* (Non-breeding)
- Pink-footed goose *Anser brachyrhynchus* (Non-breeding)
- Dark-bellied brent goose *Branta bernicla bernicla* (Non-breeding)
- Common shelduck *Tadorna tadorna* (Non-breeding)
- Eurasian wigeon *Anas penelope* (Non-breeding)
- Gadwall *Anas strepera* (Non-breeding)
- Northern pintail *Anas acuta* (Non-breeding)
- Black (common) scoter *Melanitta nigra* (Non-breeding)
- Common goldeneye *Bucephala clangula* (Non-breeding)
- Eurasian oystercatcher *Haematopus ostralegus* (Non-breeding)
- Grey plover *Pluvialis squatarola* (Non-breeding)
- Red knot *Calidris canutus* (Non-breeding)
- Sanderling *Calidris alba* (Non-breeding)
- Dunlin *Calidris alpina alpina* (Non-breeding)
- Black-tailed godwit *Limosa limosa islandica* (Non-breeding)
- Bar-tailed godwit *Limosa lapponica* (Non-breeding)
- Eurasian curlew *Numenius arquata* (Non-breeding)
- Common redshank *Tringa totanus* (Non-breeding)
- Ruddy turnstone *Arenaria interpres* (Non-breeding)
- Common tern *Sterna hirundo* (Breeding)
- Little tern *Sterna albifrons* (Breeding)

6.160 With regards to The Wash Ramsar[111] the following are reasons for designation:

Ramsar Criterion 1

6.161 The Wash is a large shallow bay comprising very extensive saltmarshes, major intertidal banks of sand and mud, shallow water and deep channels.

Ramsar Criterion 3

6.162 Qualifies because of the inter-relationship between its various components including saltmarshes, intertidal sand and mud flats and the estuarine waters. The saltmarshes and the plankton in the estuarine water provide a primary source of organic material which, together with other organic matter, forms the basis for the high productivity of the estuary.

Ramsar Criterion 5

6.163 Assemblages of international importance:

6.164 Species with peak counts in winter:

- 292541 waterfowl

Ramsar Criterion 6 – species/populations occurring at levels of international importance.

6.165 Qualifying Species/populations (as identified at designation):

6.166 Species with peak counts in spring/autumn:

- Eurasian oystercatcher, *Haematopus ostralegus ostralegus*, Europe & NW Africa -wintering – 15616 individuals, representing an average of 1.5% of the population
- Grey plover, *Pluvialis squatarola*, E Atlantic/W Africa -wintering – 13129 individuals, representing an average of 5.3% of the population
- Red knot, *Calidris canutus islandica*, W & Southern Africa (wintering) – 68987 individuals, representing an average of 15.3% of the population
- Sanderling, *Calidris alba*, Eastern Atlantic – 3505 individuals, representing an average of 2.8% of the population
- Eurasian curlew, *Numenius arquata arquata*, N. a. arquata Europe (breeding) – 9438 individuals, representing an average of 2.2% of the population
- Common redshank, *Tringa totanus totanus*, - 6373 individuals, representing an average of 2.5% of the population
- Ruddy turnstone, *Arenaria interpres interpres*, NE Canada, Greenland/W Europe & NW Africa – 888 individuals, representing an average of 1.7% of the GB population

6.167 Species with peak counts in winter:

- Pink-footed goose, *Anser brachyrhynchus*, Greenland, Iceland/UK – 29099 individuals, representing an average of 12.1% of the population
- Dark-bellied brent goose, *Branta bernicla bernicla* – 20861 individuals, representing an average of 9.7% of the population
- Common shelduck, *Tadorna tadorna*, NW Europe – 9746 individuals, representing an average of 3.2% of the population
- Northern pintail, *Anas acuta*, NW Europe – 431 individuals, representing an average of 1.5% of the GB population
- Dunlin, *Calidris alpina alpina*, W Siberia/W Europe – 36600 individuals, representing an average of 2.7% of the population
- Bar-tailed godwit, *Limosa lapponica lapponica*, W Palearctic – 16546 individuals, representing an average of 13.7% of the population

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

6.169 Species with peak counts in spring/autumn:

- Ringed plover, *Charadrius hiaticula*, Europe/Northwest Africa – 1500 individuals, representing an average of 2% of the population

- Black-tailed godwit, *Limosa limosa islandica*, Iceland/W Europe – 6849 individuals, representing an average of 19.5% of the population

6.170 Species with peak counts in winter:

- European golden plover, *Pluvialis apricaria apricaria*, P. a. altifrons Iceland & Faroes/E Atlantic – 22033 individuals, representing an average of 2.3% of the population
- Northern lapwing, *Vanellus vanellus*, Europe -breeding – 46422 individuals, representing an average of 1.3% of the population

Environmental Vulnerabilities

6.171 With regards to the Wash and North Norfolk Coast 2014 SIP[112] the following are threats and pressure listed for these sites:

- inappropriate water levels
- public access/disturbance
- siltation
- fisheries: recreational marine and estuarine
- invasive species
- inappropriate coastal management
- fisheries: commercial marine and estuarine
- predation
- coastal squeeze
- change in land management
- air pollution: impact of atmospheric nitrogen deposition
- changes in species distributions

6.172 The 2019 Supplementary Advice to the Conservation Objectives[113] (SACO) for the Wash SPA goes into more detail on these vulnerabilities.

A.24 Greater Wash SPA

Conservation Objectives

6.173 With regard to the SPA[114] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.174 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

Qualifying Features

- Red-throated diver *Gavia stellata* (Non-breeding)
- Common scoter *Melanitta nigra* (Non-breeding)
- Little gull *Hydrocoloeus minutus* (Non-breeding)
- Sandwich tern *Sterna sandvicensis* (Breeding)
- Common tern *Sterna hirundo* (Breeding)
- Little tern *Sternula albifrons* (Breeding)

Environmental Vulnerabilities

6.175 No supplementary advice available.

A.25 Overstrand Cliffs SAC

Conservation Objectives

6.176 With regard to the SAC[115] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.177 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 the qualifying natural habitats
- the structure and function (including typical species) of the qualifying natural habitats
- the supporting processes on which the qualifying natural habitats rely

Qualifying Features

- Vegetated sea cliffs of the Atlantic and Baltic coasts

Environmental Vulnerabilities

6.178 With regards to this SAC's SIP[116] the following are threats and pressure listed for the site:

- inappropriate coastal management

6.179 The 2019 Supplementary Advice to the Conservation Objectives[117] (SACO) goes into more detail on these vulnerabilities.

A.26 Winterton-Horsey Dunes SAC

Conservation Objectives

6.180 With regard to the SAC[118] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.181 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 the qualifying natural habitats
- the structure and function (including typical species) of the qualifying natural habitats
- the supporting processes on which the qualifying natural habitats rely

Qualifying Features

- Embryonic shifting dunes
- Shifting dunes along the shoreline with *Ammophila arenaria* ('white dunes'); Shifting dunes with marram
- Atlantic decalcified fixed dunes (*Calluno-Ulicetea*)
- Humid dune slacks

Environmental Vulnerabilities

6.182 With regards to the Great Yarmouth Winterton Horsey 2018 SIP[119] the following are threats and pressure listed for these sites:

- inappropriate coastal management
- coastal squeeze
- public access/disturbance
- hydrological changes
- inappropriate scrub control
- inappropriate pest control
- invasive species
- undergrazing
- air pollution: impact of atmospheric nitrogen deposition

6.183 The 2019 Supplementary Advice to the Conservation Objectives[120] (SACO) goes into more detail on these vulnerabilities.

A.27 Great Yarmouth North Denes SPA

Conservation Objectives

6.184 With regard to the SPA[121] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.185 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

Qualifying Features

- Little tern *Sterna albifrons* (Breeding)

Environmental Vulnerabilities

6.186 With regards to the Great Yarmouth Winterton Horsey 2018 SIP[122] the following are threats and pressure listed for these sites:

- inappropriate coastal management
- coastal squeeze
- public access/disturbance
- hydrological changes
- inappropriate scrub control
- inappropriate pest control
- invasive species
- undergrazing
- air pollution: impact of atmospheric nitrogen deposition

6.187 The 2019 Supplementary Advice to the Conservation Objectives[123] (SACO) goes into more detail on these vulnerabilities.

A.28 Benacre to Easton Bavents Lagoons SAC

Conservation Objectives

6.188 With regard to the SAC[124] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.189 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

Qualifying Features

- Coastal lagoons

Environmental Vulnerabilities

6.190 With regards to the Benacre to Easton Bavents 2015 SIP[125] the following are threats and pressure listed for the site:

- public access/disturbance
- water pollution
- physical modification
- changes in species distributions
- fisheries: commercial marine and estuarine

6.191 The 2019 Supplementary Advice to the Conservation Objectives[126] (SACO) goes into more detail on these vulnerabilities.

A.29 Benacre to Easton Bavents SPA and Ramsar

Conservation Objectives

6.192 With regard to the SPA[127] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.193 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

Qualifying Features

6.194 With regards to the SPA the following are reasons for designation:

- Great bittern *Botaurus stellaris* (Breeding)

- Eurasian marsh harrier *Circus aeruginosus* (Breeding)
- Little tern *Sterna albifrons* (Breeding)

6.195 With regards to the Benacre to Easton Bavents Ramsar the following are reasons for designation:

- no supplementary advice available

Environmental Vulnerabilities

6.196 With regards to the Benacre to Easton Bavents 2015 SIP[128] the following are threats and pressure listed for the site:

- public access/disturbance
- water pollution
- physical modification
- changes in species distributions
- fisheries: commercial marine and estuarine

6.197 The 2019 Supplementary Advice to the Conservation Objectives[129] (SACO) goes into more detail on these vulnerabilities.

A.30 Minsmere to Walberswick Heaths & Marshes SAC

Conservation Objectives

6.198 With regard to the SAC[130] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

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

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

Qualifying Features

- Annual vegetation of drift lines
- Perennial vegetation of stony banks: Coastal shingle vegetation outside the reach of waves
- European dry heaths

Environmental Vulnerabilities

6.200 With regards to this SAC and others included within the Minsmere to Walberswick Heaths & Marshes 2014 SIP[131] the following are threats and pressure listed for those sites:

- coastal squeeze
- public access/disturbance
- changes in species distributions
- invasive species
- inappropriate pest control
- air pollution: impact of atmospheric nitrogen deposition
- water pollution
- deer
- fisheries: commercial marine and estuarine

6.201 The 2019 Supplementary Advice to the Conservation Objectives[132] (SACO) goes into more detail on these vulnerabilities.

A.31 Orfordness-Shingle Street SAC

Conservation Objectives

6.202 With regard to the SAC[133] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.203 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

Qualifying Features

- coastal lagoons
- annual vegetation of drift lines
- perennial vegetation of stony banks: Coastal shingle vegetation outside the reach of waves

Environmental Vulnerabilities

6.204 With regards to this SAC and others included within the Alde-Ore Estuaries 2014 SIP[134] the following are threats and pressure listed for those sites:

- hydrological changes
- public access/disturbance
- inappropriate coastal management
- coastal squeeze
- inappropriate pest control
- changes in species distributions

- invasive species
- air pollution: impact of atmospheric nitrogen deposition
- fisheries: commercial marine and estuarine

6.205 The 2019 Supplementary Advice to the Conservation Objectives[135] (SACO) goes into more detail on these vulnerabilities.

A.32 Alde-Ore & Butley Estuaries SAC

Conservation Objectives

6.206 With regard to the SAC[136] With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.207 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

Qualifying Features

- estuaries
- mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats
- atlantic salt meadows (Glauco-Puccinellietalia maritimae)

Environmental Vulnerabilities

6.208 With regards to this SAC and others included within the Alde-Ore Estuaries 2014 SIP[137] the following are threats and pressure listed for those sites:

- hydrological changes
- public access/disturbance
- inappropriate coastal management
- coastal squeeze
- inappropriate pest control
- changes in species distributions
- invasive species
- air pollution: impact of atmospheric nitrogen deposition
- fisheries: commercial marine and estuarine

6.209 No Supplementary Advice to the Conservation Objectives (SACO) is available.

A.33 Alde-Ore & Butley Estuaries SPA and Ramsar

Conservation Objectives

6.210 No supplementary advice available.

Qualifying Features

6.211 With regards to the Alde-Ore & Butley Estuaries SPA, no supplementary advice is available.

6.212 With regards to the Alde-Ore & Butley Estuaries Ramsar, no supplementary advice is available.

Environmental Vulnerabilities

6.213 With regards to this SPA and others included within the Alde-Ore Estuaries 2014 SIP[138] the following are threats and pressure listed for those sites:

- hydrological changes
- public access/disturbance
- inappropriate coastal management
- coastal squeeze
- inappropriate pest control
- changes in species distributions
- invasive species
- air pollution: impact of atmospheric nitrogen deposition
- fisheries: commercial marine and estuarine

6.214 The 2019 Supplementary Advice to the Conservation Objectives[139] (SACO) goes into more detail on these vulnerabilities.

A.34 Hamford Water SAC

Conservation Objectives

6.215 With regard to the SAC[140] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

6.216 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 the habitats of qualifying species
- the structure and function of the habitats of qualifying species
- the supporting processes on which the habitats of qualifying species rely
- the populations of qualifying species

- the distribution of qualifying species within the site

Qualifying Features

- Gortyna borelii lunata; Fisher's estuarine moth

Environmental Vulnerabilities

6.217 With regards to this SAC and others included within the Hamford Water 2014 SIP[141] the following are threats and pressure listed for those sites:

- coastal squeeze
- inappropriate scrub control
- changes in species distributions
- public access/disturbance
- air pollution: risk of atmospheric nitrogen deposition
- fisheries: commercial marine and estuarine

6.218 The 2019 Supplementary Advice to the Conservation Objectives[142] (SACO) goes into more detail on these vulnerabilities.

A.35 Hamford Water SPA and Ramsar

Conservation Objectives

6.219 With regard to the SPA[143] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.220 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

Qualifying Features

6.221 With regards to the SPA the following are reasons for designation:

- Dark-bellied brent goose *Branta bernicla bernicla* (Non-breeding)
- Common shelduck *Tadorna tadorna* (Non-breeding)
- Eurasian teal *Anas crecca* (Non-breeding)
- Pied avocet *Recurvirostra avosetta* (Non-breeding)
- Ringed plover *Charadrius hiaticula* (Non-breeding)
- Grey plover *Pluvialis squatarola* (Non-breeding)

- Black-tailed godwit *Limosa limosa islandica* (Non-breeding)
- Common redshank *Tringa totanus* (Non-breeding)
- Little tern *Sternula albifrons* (Breeding)

6.222 With regards to the Hamford Water Ramsar[144] the following are reasons for designation:

Ramsar Criterion 6 – species/populations occurring at levels of international importance.

6.223 Qualifying Species/populations (as identified at designation):

6.224 Species with peak counts in spring/autumn:

- Ringed plover, *Charadrius hiaticula*, Europe/Northwest Africa – 1169 individuals, representing an average of 1.6% of the population
- Common redshank, *Tringa totanus totanus* – 2099 individuals, representing an average of 1.8% of the GB population

6.225 Species with peak counts in winter:

- Dark-bellied brent goose, *Branta bernicla bernicla* – 3629 individuals, representing an average of 1.6% of the population
- Black-tailed godwit, *Limosa limosa islandica*, Iceland/W Europe – 377 individuals, representing an average of 1% of the population

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

6.227 Species with peak counts in winter:

- Grey plover, *Pluvialis squatarola*, E Atlantic/W Africa -wintering – 2749 individuals, representing an average of 1.1% of the population

Environmental Vulnerabilities

6.228 With regards to this SPA and others included within the Hamford Water 2014 SIP[145] the following are threats and pressure listed for those sites:

- coastal squeeze
- inappropriate scrub control
- changes in species distributions
- public access/disturbance
- air pollution: risk of atmospheric nitrogen deposition
- fisheries: commercial marine and estuarine

6.229 The 2020 Supplementary Advice to the Conservation Objectives[146] (SACO) goes into more detail on these vulnerabilities.

A.36 Essex Estuaries SAC

Conservation Objectives

6.230 With regard to the SAC[147] and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change.

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

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

Qualifying Features

- Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks
- Estuaries
- Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats
- Salicornia and other annuals colonising mud and sand; Glasswort and other annuals colonising mud and sand
- Spartina swards (*Spartinion maritimae*); Cord-grass swards
- Atlantic salt meadows (Glauco-Puccinellietalia maritimae)
- Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi);* Mediterranean saltmarsh scrub

Environmental Vulnerabilities

6.232 With regards to this SAC and others included within the Essex Estuaries 2015 SIP[148] the following are threats and pressure listed for those sites:

- coastal Squeeze
- public access/disturbance
- fisheries: commercial marine and estuarine
- planning permission: general
- changes in species distributions
- invasive species
- fisheries: recreational marine and estuarine
- air pollution: risk of nitrogen deposition

6.233 The 2019 Supplementary Advice to the Conservation Objectives[149] (SACO) goes into more detail on these vulnerabilities.

A.37 Colne Estuary SPA and Ramsar

Conservation Objectives

6.234 With regard to the SPA[150] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.235 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

Qualifying Features

6.236 With regards to the SPA the following are reasons for designation:

- Dark-bellied brent goose *Branta bernicla bernicla* (Non-breeding)
- Common pochard *Aythya ferina* (Breeding)
- Hen harrier *Circus cyaneus* (Non-breeding)
- Ringed plover *Charadrius hiaticula* (Breeding)
- Common redshank *Tringa totanus* (Non-breeding)
- Little tern *Sterna albifrons* (Breeding)

6.237 With regards to the Colne Estuary Ramsar[151] the following are reasons for designation:

Ramsar Criterion 1

6.238 The site is important due to the extent and diversity of saltmarsh present. This site, and the four other sites in the Mid-Essex Coast complex, includes a total of 3,237 ha, that represent 70% of the saltmarsh habitat in Essex and 7% of the total saltmarsh in Britain.

Ramsar Criterion 2

6.239 The site supports 12 species of nationally scarce plants and at least 38 British Red Data Book invertebrate species.

Ramsar Criterion 3

6.240 This site supports a full and representative sequences of saltmarsh plant communities covering the range of variation in Britain.

Ramsar Criterion 5

6.241 Assemblages of international importance:

6.242 Species with peak counts in winter:

- 32041 waterfowl

Ramsar Criterion 6 – species/populations occurring at levels of international importance.

6.243 Species with peak counts in winter:

- Black-tailed godwit, *Limosa limosa islandica*, Iceland/W Europe – 402 individuals, representing an average of 1.1% of the population

Environmental Vulnerabilities

6.244 With regards to this SPA and others included within the Essex Estuarine 2015 SIP[152] the following are threats and pressure listed for those sites:

- coastal Squeeze
- public access/disturbance
- fisheries: commercial marine and estuarine
- planning permission: general
- changes in species distributions
- invasive species
- fisheries: recreational marine and estuarine
- air pollution: risk of nitrogen deposition

6.245 The 2020 Supplementary Advice to the Conservation Objectives[153] (SACO) goes into more detail on these vulnerabilities.

A.38 Blackwater Estuary SPA and Ramsar

Conservation Objectives

6.246 With regard to the SPA[154] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.247 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

Qualifying Features

6.248 With regards to the SPA the following are reasons for designation:

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

6.249 With regards to the Blackwater Estuary Ramsar[155] the following are reasons for designation:

Ramsar Criterion 1

6.250 Qualifies by virtue of the extent and diversity of saltmarsh habitat present. This site, and the four others in the Mid-Essex Coast complex, includes a total of 3,237 ha that represent 70% of the saltmarsh habitat in Essex and 7% of the total area of saltmarsh in Britain.

Ramsar Criterion 2

6.251 The invertebrate fauna is well represented and includes at least 16 British Red Data Book species. In descending order of rarity these are: Endangered: a water beetle *Paracymus aeneus*; Vulnerable: a damselfly *Lestes dryas*, the flies *Aedes flavescens*, *Erioptera bivittata*, *Hybomitra expollicata* and the spiders *Heliophanus auratus* and *Trichopterna cito*; Rare: the beetles *Baris scolopacea*, *Philonthus punctus*, *Graptodytes bilineatus* and *Malachius vulneratus*, the flies *Campsicemus magius* and *Myopites eximia*, the moths *Idaea ochrata* and *Malacosoma castrensis* and the spider *Euophrys*.

Ramsar Criterion 3

6.252 This site supports a full and representative sequences of saltmarsh plant communities covering the range of variation in Britain.

Ramsar Criterion 5

6.253 Assemblages of international importance:

6.254 Species with peak counts in winter:

- 105061 waterfowl

Ramsar Criterion 6 – species/populations occurring at levels of international importance.

6.255 Qualifying Species/populations (as identified at designation):

6.256 Species with peak counts in winter:

- Dark-bellied brent goose, *Branta bernicla bernicla* – 8689 individuals, representing an average of 4% of the population
- Grey plover, *Pluvialis squatarola*, E Atlantic/W Africa -wintering – 4215 individuals, representing an average of 1.7% of the population
- Dunlin, *Calidris alpina alpina*, W Siberia/W Europe – 27655 individuals, representing an average of 2% of the population
- Black-tailed godwit, *Limosa limosa islandica*, Iceland/W Europe – 2174 individuals, representing an average of 6.2% of the population

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

6.258 Species with peak counts in winter:

- Common shelduck, *Tadorna tadorna*, NW Europe – 3141 individuals, representing an average of 1% of the population
- European golden plover, *Pluvialis apricaria apricaria*, P. a. altifrons Iceland & Faroes/E Atlantic – 16083 individuals, representing an average of 1.7% of the population

Environmental Vulnerabilities

6.259 With regards to this SPA and others included within the Essex Estuarine 2015 SIP[156] the following are threats and pressure listed for those sites:

- coastal Squeeze
- public access/disturbance
- fisheries: commercial marine and estuarine
- planning permission: general
- changes in species distributions
- invasive species
- fisheries: recreational marine and estuarine
- air pollution: risk of nitrogen deposition

6.260 The 2021 Supplementary Advice to the Conservation Objectives[157] (SACO) goes into more detail on these vulnerabilities.

A.39 Dengie SPA and Ramsar

Conservation Objectives

6.261 With regard to the SPA[158] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.262 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

Qualifying Features

6.263 With regards to the SPA the following are reasons for designation:

- Dark-bellied brent goose *Branta bernicla bernicla* (Non-breeding)
- Hen harrier *Circus cyaneus* (Non-breeding)
- Grey plover *Pluvialis squatarola* (Non-breeding)
- Red knot *Calidris canutus* (Non-breeding)

6.264 With regards to the Dengie Ramsar[159] the following are reasons for designation:

Ramsar Criterion 1

6.265 Qualifies by virtue of the extent and diversity of saltmarsh habitat present. Dengie, and the four other sites in the Mid-Essex Coast Ramsar site complex, includes a total of 3,237 ha, that represent 70% of the saltmarsh habitat in Essex and 7% of the total area of saltmarsh in Britain.

Ramsar Criterion 2

6.266 Dengie supports a number of rare plant and animal species. The Dengie has 11 species of nationally scarce plants: sea kale *Crambe maritima*, sea barley *Hordeum marinum*, golden samphire *Inula crithmoides*, lax flowered sea lavender *Limonium humile*, the glassworts *Sarcocornia perennis* and *Salicornia pusilla*, small cord-grass *Spartina maritima*, shrubby sea-blite Suaeda *vera*, and the eelgrasses *Zostera angustifolia*, *Z. marina* and *Z. noltei*. The invertebrate fauna includes the following Red Data Book species: a weevil *Baris scolopacea*, a horsefly *Atylotus latistriatus* and a jumping spider *Euophrys browningi*.

Ramsar Criterion 3

6.267 This site supports a full and representative sequences of saltmarsh plant communities covering the range of variation in Britain.

Ramsar Criterion 5

6.268 Assemblages of international importance:

6.269 Species with peak counts in winter:

- 43828 waterfowl

Ramsar Criterion 6 – species/populations occurring at levels of international importance.

6.270 Qualifying Species/populations (as identified at designation):

6.271 Species with peak counts in winter:

- Dark-bellied brent goose, Branta bernicla *bernicla* – 2000 individuals, representing an average of 2% of the GB population
- Grey plover, *Pluvialis squatarola*, E Atlantic/W Africa -wintering – 4582 individuals, representing an average of 1.8% of the population
- Red knot, *Calidris canutus islandica*, W & Southern Africa (wintering) – 14528 individuals, representing an average of 3.2% of the population
- Species/populations identified subsequent to designation for possible future consideration under criterion 6:
- Species with peak counts in winter:
- Bar-tailed godwit, *Limosa lapponica lapponica*, W Palearctic – 2593 individuals, representing an average of 2.1% of the population

Environmental Vulnerabilities

6.272 With regards to this SPA and others included within the Essex Estuarine 2015 SIP[160] the following are threats and pressure listed for those sites:

- coastal Squeeze
- public access/disturbance
- fisheries: commercial marine and estuarine
- planning permission: general
- changes in species distributions
- invasive species
- fisheries: recreational marine and estuarine
- air pollution: risk of nitrogen deposition

6.273 The 2019 Supplementary Advice to the Conservation Objectives[161] (SACO) goes into more detail on these vulnerabilities.

A.40 Foulness SPA and Ramsar

Conservation Objectives

6.274 With regard to the SPA[162] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.275 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

Qualifying Features

6.276 With regards to the SPA the following are reasons for designation:

- Dark-bellied brent goose *Branta bernicla bernicla* (Non-breeding)
- Hen harrier *Circus cyaneus* (Non-breeding)
- Eurasian oystercatcher *Haematopus ostralegus* (Non-breeding)
- Pied avocet *Recurvirostra avosetta* (Breeding)
- Ringed plover *Charadrius hiaticula* (Breeding)
- Grey plover *Pluvialis squatarola* (Non-breeding)
- Red knot *Calidris canutus* (Non-breeding)
- Bar-tailed godwit *Limosa lapponica* (Non-breeding)
- Common redshank *Tringa totanus* (Non-breeding)
- Sandwich tern *Sterna sandvicensis* (Breeding)
- Common tern *Sterna hirundo* (Breeding)
- Little tern *Sterna albifrons* (Breeding)

6.277 With regards to the Foulness Ramsar[163] the following are reasons for designation:

Ramsar Criterion 1

6.278 This site qualifies by virtue of the extent and diversity of saltmarsh habitat present. This and four other sites in the Mid-Essex Coast Ramsar site complex, include a total of 3,237 ha, that represent 70% of the saltmarsh habitat in Essex and 7% of the total area of saltmarsh in Britain

Ramsar Criterion 2

6.279 The site supports a number of nationally-rare and nationally-scarce plant species, and British Red Data Book invertebrates.

Ramsar Criterion 3

6.280 The site contains extensive saltmarsh habitat, with areas supporting full and representative sequences of saltmarsh plant communities covering the range of variation in Britain.

Ramsar Criterion 5

6.281 Assemblages of international importance:

6.282 Species with peak counts in winter:

- 82148 waterfowl

Ramsar Criterion 6 – species/populations occurring at levels of international importance.

6.283 Qualifying Species/populations (as identified at designation):

6.284 Species with peak counts in spring/autumn:

- Common redshank, *Tringa totanus tetanus* – 2586 individuals, representing an average of 1% of the population

6.285 Species with peak counts in winter:

- Dark-bellied brent goose, Branta bernicla bernicla – 6475 individuals, representing an average of 3% of the population
- Eurasian oystercatcher, Haematopus ostralegus ostralegus, Europe & NW Africa -wintering – 14674 individuals, representing an average of 1.4% of the population
- Grey plover, Pluvialis squatarola, E Atlantic/W Africa -wintering – 4343 individuals, representing an average of 1.7% of the population
- Red knot, Calidris canutus islandica, W & Southern Africa (wintering) – 22439 individuals, representing an average of 4.9% of the population
- Bar-tailed godwit, Limosa lapponica lapponica, W Palearctic – 4095 individuals, representing an average of 3.4% of the population

Environmental Vulnerabilities

6.286 With regards to this SPA and others included within the Essex Estuarine 2015 SIP[164] the following are threats and pressure listed for those sites:

- coastal Squeeze
- public access/disturbance
- fisheries: commercial marine and estuarine
- planning permission: general
- changes in species distributions
- invasive species
- fisheries: recreational marine and estuarine
- air pollution: risk of nitrogen deposition

6.287 The 2020 Supplementary Advice to the Conservation Objectives[165] (SACO) goes into more detail on these vulnerabilities.

A.41 Crouch & Roach SPA and Ramsar

Conservation Objectives

6.288 With regard to the SPA[166] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.289 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

Qualifying Features

6.290 With regards to the SPA the following are reasons for designation:

- Dark-bellied brent goose *Branta bernicla bernicla* (Non-breeding)

6.291 With regards to the Crouch & Roach Ramsar[167] the following are reasons for designation:

Ramsar Criterion 2

6.292 Supports an appreciable assemblage of rare, vulnerable or endangered species or subspecies of plant and animal 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 maritima*, shrubby seablite *Suaeda vera* and sea clover *Trifolium squamosum*. Several important invertebrate species are also present on the site, including scarce emerald *damselfly Lestes dryas*, the shorefly *Parydroptera discomyzina*, the rare soldier fly *Stratiomys singularior*, the large horsefly *Hybomitra expollicata*, the beetles *Graptodytes bilineatus* and *Malachius vulneratus*, the ground lackey moth *Malacosoma castrensis* and *Eucosoma catoprana*.

Ramsar Criterion 5

6.293 Assemblages of international importance:

6.294 Species with peak counts in winter:

- 16970 waterfowl

Ramsar Criterion 6 – species/populations occurring at levels of international importance.

6.295 Qualifying Species/populations (as identified at designation):

6.296 Species with peak counts in winter:

- Dark-bellied brent goose, *Branta bernicla bernicla* – 2103 individuals, representing an average of 2.1% of the GB population

Environmental Vulnerabilities

6.297 With regards to this SPA and others included within the Essex Estuarine 2015 SIP[168] the following are threats and pressure listed for those sites:

- coastal Squeeze
- public access/disturbance
- fisheries: commercial marine and estuarine

- planning permission: general
- changes in species distributions
- invasive species
- fisheries: recreational marine and estuarine
- air pollution: risk of nitrogen deposition

6.298 The 2020 Supplementary Advice to the Conservation Objectives[169] (SACO) goes into more detail on these vulnerabilities.

A.42 Benfleet & Southend Marshes SPA and Ramsar

Conservation Objectives

6.299 With regard to the SPA[170] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.300 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

Qualifying Features

6.301 With regards to the SPA the following are reasons for designation:

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

6.302 With regards to the Crouch & Roach Ramsar[171] the following are reasons for designation:

Ramsar Criterion 5

6.303 Assemblages of international importance:

6.304 Species with peak counts in winter:

- 32867 waterfowl

Ramsar Criterion 6 – species/populations occurring at levels of international importance.

6.305 Qualifying Species/populations (as identified at designation):

6.306 Species with peak counts in spring/autumn:

- Dark-bellied brent goose, *Branta bernicla bernicla* – 4532 individuals, representing an average of 2.1% of the population

6.307 Species with peak counts in winter:

- Grey plover, Pluvialis squatarola, E Atlantic/W Africa -wintering – 1710 individuals, representing an average of 3.2% of the GB population
- Red knot, Calidris canutus islandica, W & Southern Africa (wintering) – 6307 individuals, representing an average of 1.4% of the population

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

6.309 Species with peak counts in winter:

Dunlin, *Calidris alpina alpina*, W Siberia/W Europe – 17591 individuals, representing an average of 1.3% of the population

Environmental Vulnerabilities

6.310 With regards to this SPA and others included within the Greater Thames Complex 2014 SIP[172] the following are threats and pressure listed for those sites:

- coastal squeeze
- public access/disturbance
- invasive species
- changes in species distributions
- fisheries: commercial marine and estuarine
- vehicles: illicit
- air pollution: risk of atmospheric nitrogen deposition

6.311 The 2017 Supplementary Advice to the Conservation Objectives[173] (SACO) goes into more detail on these vulnerabilities.

A.43 Thames Estuary & Marshes SPA and Ramsar

Conservation Objectives

6.312 With regard to the SPA[174] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.313 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

Qualifying Features

6.314 With regards to the SPA the following are reasons for designation:

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

6.315 With regards to the Crouch & Roach Ramsar[175] the following are reasons for designation:

Ramsar Criterion 2

6.316 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.

Ramsar Criterion 5

6.317 Assemblages of international importance:

6.318 Species with peak counts in winter:

- 45118 waterfowl

Ramsar Criterion 6 – species/populations occurring at levels of international importance.

6.319 Qualifying Species/populations (as identified at designation):

6.320 Species with peak counts in spring/autumn:

- Ringed plover, Charadrius hiaticula, Europe/Northwest Africa – 595 individuals, representing an average of 1.8% of the GB population
- Black-tailed godwit, Limosa limosa islandica, Iceland/W Europe – 1640 individuals, representing an average of 4.6% of the population

6.321 Species with peak counts in winter:

- Grey plover, Pluvialis squatarola, E Atlantic/W Africa -wintering – 1643 individuals, representing an average of 3.1% of the GB population
- Red knot, Calidris canutus islandica, W & Southern Africa (wintering) – 7279 individuals, representing an average of 1.6% of the population
- Dunlin, Calidris alpina alpina, W Siberia/W Europe – 15171 individuals, representing an average of 1.1% of the population

- Common redshank, Tringa totanus totanus – 1178 individuals, representing an average of 1% of the GB population

Environmental Vulnerabilities

6.322 With regards to this SPA and others included within the Greater Thames Complex 2014 SIP[176] the following are threats and pressure listed for those sites:

- coastal squeeze
- public access/disturbance
- invasive species
- changes in species distributions
- fisheries: commercial marine and estuarine
- vehicles: illicit
- air pollution: risk of atmospheric nitrogen deposition

6.323 The 2018 Supplementary Advice to the Conservation Objectives[177] (SACO) goes into more detail on these vulnerabilities.

A.44 Outer Thames Estuary SPA

Conservation Objectives

6.324 With regard to the SPA[178] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.325 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

Qualifying Features

- Red-throated diver *Gavia stellata* (Non-breeding)
- Common tern *Sterna hirundo* (Breeding)
- Little tern *Sternula albifrons* (Breeding)

Environmental Vulnerabilities

6.326 With regards to this SPA's SIP[179] the following are threats and pressure listed for the site:

- fisheries: commercial marine and estuarine

6.327 The 2019 Supplementary Advice to the Conservation Objectives[180] (SACO) goes into more detail on these vulnerabilities.

A.45 Abberton Reservoir SPA

Conservation Objectives

6.328 With regard to the SPA[181] and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change.

6.329 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

Qualifying Features

- Great crested grebe *Podiceps cristatus* (Non-breeding)
- Great cormorant *Phalacrocorax carbo* (Breeding)
- Mute swan *Cygnus olor* (Non-breeding)
- Eurasian wigeon *Anas penelope* (Non-breeding)
- Gadwall *Anas strepera* (Non-breeding)
- Eurasian teal *Anas crecca* (Non-breeding)
- Northern shoveler *Anas clypeata* (Non-breeding)
- Common pochard *Aythya ferina* (Non-breeding)
- Tufted duck *Aythya fuligula* (Non-breeding)
- Common goldeneye *Bucephala clangula* (Non-breeding)
- Common coot *Fulica atra* (Non-breeding)

Environmental Vulnerabilities

6.330 With regards to this SPA's SIP[182] the following are threats and pressure listed for the site:

- siltation
- public access/disturbance
- planning permission: general
- changes in species distributions
- bird strike
- water pollution
- air pollution: risk of atmospheric nitrogen deposition

6.331 The 2019 Supplementary Advice to the Conservation Objectives[183] (SACO) goes into more detail on these vulnerabilities.

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