Habitats Regulations Assessment of Greater Norwich Regulation 19 Draft Plan

for

Greater Norwich Development Partnership

December 2020

Status: Draft

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Quality standards

This report is certified BS 42020 compliant and has been prepared in accordance with The Chartered Institute of Ecology and Environmental Management's (CIEEM) Technical Guidance Series '*Ecological Report Writing*' and Code of Professional Conduct.

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Non-technical summary

The Landscape Partnership was commissioned by the Greater Norwich Development Partnership to undertake a Habitat Regulations Assessment (HRA) of the Greater Norwich Local Plan (GNLP). This report is an assessment of the Draft Submission Reg 19 stage v1.6 of the emerging Greater Norwich Local Plan, encompassing Norwich City, Broadland District (excluding the Broads Authority area), and South Norfolk District.

The objectives of the study were to identify European sites within and near the Greater Norwich Local Plan Area along with their qualifying features and to determine if these would be directly or indirectly affected by the emerging Local Plan. Overall, the aim was to determine whether the plan would have a likely significant effect upon the integrity of any European site. The focus of the assessment is on direct and indirect effects of proposed housing although other matters such as transport and employment land were also assessed. This report accompanies the Regulation 19 Consultation on the Draft Plan.

The report was written by Nick Sibbett CEcol MCIEEM CEnv CMLI and reviewed by Dr Jo Parmenter CEcol MCIEEM CEnv MIEMA.

Impacts considered for the proposed distribution of housing include water cycles (use and disposal), air pollution especially from new roads and an increase or change in the pattern of distribution of road users, water pollution or enrichment resulting from discharge to water, and the impacts of increased visitors to European sites. In addition to considering the potential impacts of the growth proposed by the GNLP alone, a number of other plans or projects were identified that could have in-combination impacts.

The GNLP identifies a housing need of 40,541 homes between 2018 and 2038. Of that number, 5,240 of these homes were delivered between 1 April 2018 and 31 March 2020, including student accommodation and housing for the elderly. The remainder will be delivered through the allocation of new sites for 10,704 new homes, and the delivery of existing allocations (at April 2020) totalling 31,452 homes by 2038. Policy 7.5 delivers 800 homes on small-scale sites, and there is a limited allowance of 1,296 windfall homes to demonstrate delivery of some of the total housing figure. The number of planned homes in the GNLP therefore totals 49,492 homes, which is equivalent to a 22% housing delivery buffer above need. The GNLP considers the housing delivery buffer necessary to ensure the delivery of the housing requirement of 40,541, mitigating risk of non-delivery of sites to ensure meeting the local need. It also provides for the potential for higher growth rates. Of the 10,704 new allocations, a minimum of 1,200 of these homes will be allocated in a separate South Norfolk Village Clusters Housing Site Allocations document and 250 homes will be provided through allocations in the Diss and Area Neighbourhood Plan

There is a contingency site at Costessey for around 800 homes should it be needed due to low delivery of allocated housing sites elsewhere.

Strategic allocations of 360ha are made for employment land.

No allocations will be within or close to any European site such that there would be construction impacts such as land-take or disturbance from the construction activities, and there will be no allocations within 1km of a European site leading to direct recreational impacts. Development within 1km of a European site is likely to be acceptable only when the development acting alone would not contribute more than a negligible amount of additional recreational pressure.

Natural England has advised all Local Planning Authorities in Norfolk that large developments (defined as fifty houses or more) include green space which is proportionate to its scale to minimise any predicted increase in recreational pressure to designated sites, by containing the majority of recreation within and around the developed site. This advice applies across the whole of Norfolk because Natural England considers that development of this scale anywhere in the county could have a likely significant effect on a European site. Various criteria are made for the size and quality of the green space. No evidence has been provided to support the threshold of 50 or more dwellings, and it is considered that each and every new home may have an identical impact. Greater Norwich Local Plan requires all residential development to provide green infrastructure. The requirement is not restricted to 50 or more dwellings as advised by Natural England. If a development site is too small to provide green infrastructure on site, a contribution secured by S106 to green infrastructure elsewhere will be required.

The forthcoming Green Infrastructure and Recreational Impact Avoidance Strategy (GIRAMS) proposes a tariff based payment taken from residential, and other relevant accommodation e.g. tourist accommodation, that will be used to fund package of avoidance and mitigation measures to be delivered at Habitat Sites. This consists of a team of Rangers to influence visitor behaviour, signage, monitoring, a dog project, providing strategic mitigation projects, and various other tasks. A tariff payment of £205.02 is proposed. It is considered that these GIRAMS measures described above would be sufficient that the assessment is able to ascertain no adverse effect upon the integrity of any European site from the in-combination effects of residential developments across the plan area and beyond.

A new Country Park is being created by Broadland District Council between Felthorpe and Horstead, which will be designed and managed to attract a larger number of recreational visitors. It will also act to reduce visitor pressure on European sites by providing an attractive alternative for countryside visits.

There would be no impact on European sites from water abstraction as there would be no additional abstraction to meet water needs. Water for new homes and employment facilities would be made available from reductions in water used by existing homes and businesses.

Development (residential and employment) which would rely on its waste water being treated at Reepham WRC, Foulsham WRC, and Freethorpe WRC would result in an adverse affect upon the integrity of River Wensum SAC and the Broads European site. Development which would rely on its waste water being treated at Whitlingham Trowse WRC might result in an adverse affect upon the integrity of River Wensum SAC and the Broads European site Mitigation works at the WRCs to reduce pollutant discharge is outside the control of the Greater Norwich Local Plan and its constituent Councils. Allocations which would use those WRCs to treat waste water cannot at this time be delivered. The allocations may be made, but delivery would be restricted until water quality issues are resolved. This could be by improved analysis and assessment in the forthcoming Water Cycle Study or a phasing delay until sewage works are upgraded. Other ways to ensure that additional pollutants such as phosphate do not enter European sites could include converting land from arable use to semi-natural habitats thus reducing the run-off from that land. Careful calculation may be needed to ensure nutrient neutrality. There would be compatibility with Biodiversity Net Gain (Policy 3) if off-site habitat creation is needed; the habitat creation for BNG if sited carefully will also reduce nutrient input to rivers. **Completion of the Water Cycle Study is necessary to be clearer about any impacts on European sites.**

Norwich Western Link Road, which would join the A1270 to the A47, includes a viaduct crossing over the River Wensum SAC. There is potential for the river crossing to cause harm to the SAC. The Norwich Western Link road is a Norfolk County Council project not controlled by or reliant on the GNLP, but GNLP needs to recognise progress of the scheme. Other road and rail improvements also are promoted and regulated by other bodies and are not controlled by or reliant on the Greater Norwich Local Plan.

It is recommended that additional supporting text is added to Policy 4.

> ***Delivery of many of these transport improvements are outside the control of the Greater Norwich Local Plan. For example, the Norwich Western Link road and development of bus improvements are the responsibility of Norfolk County Council, and A140 and A47 improvements are the responsibility of Highways England. The GNLP Authorities will support the transport infrastructure improvements provided that their promoters and the relevant competent authority are able to demonstrate that they would not conflict with other policies of GNLP and where there would be no adverse affect on the integrity of a European site.***

There are no new allocations for tourism development in GNLP. However, even small-scale windfall tourism developments might result in impacts upon European sites. Although there are safeguards in Policy 3 for accommodation, developers of small-scale tourism schemes in particular might not be aware of the implications**. To provide clarity, it is recommended that extra clarification is added to Policy 6, section 5 perhaps as supporting text '*Habitats Regulations Assessments will be required for small scale tourism accommodation within 1km of European sites. Tourism accommodation will be treated as residential development on the basis of 6 bed spaces being equivalent to one home, with respect to policy 3 for green infrastructure for the GIRAMS tariff payment. Habitats Regulations Assessment will also be required for tourism, leisure, cultural and environmental activities which would result in greater use of European sites*'.**

The contingency allocation of 800 homes at **might well be reliant on the Whitlingham Trowse Water Recycling Centre being upgraded before it is deliverable**.

It is concluded that **subject to satisfactory resolution of the outstanding matters listed above,** there would be no adverse affect upon the integrity of any European site.

1 Introduction

1.1 The plan being considered

1.1.1 Broadland District Council, Norwich City Council and South Norfolk Council, working with Norfolk County Council and Broads Authority, are working together to prepare the Greater Norwich Local Plan (GNLP). This will replace the Joint Core Strategy for Broadland, Norwich and South Norfolk (JCS), which was adopted in March 2011, and other more recently adopted 'lower tier' Development Plan Documents. The plan being considered in this assessment is the Regulation 19 Submission Draft version 1.5 document of December 2020. The three local Planning Authorities have come together to form the Greater Norwich Development Partnership to deliver the GNLP.

1.2 The Joint Core Strategy for Broadland, Norwich and South Norfolk (2011)

1.2.1 The JCS plans for the housing and jobs needs of the area to 2026, and identifies the broad scale and distribution of proposed development over the Plan period. It aims to some deliver 37,000 homes and create 27,000 jobs in a way that minimises the impact on the environment and maximises the quality of life.

1.2.2 Growth is focussed in a large mixed-use urban extension within the Old Catton, Sprowston, Rackheath and Thorpe St Andrew, referred to as the 'Broadland Growth Triangle', and on brownfield land in the Norwich urban area. Other large-scale growth locations are identified in the A11 corridor, at Wymondham, Easton/Costessey, Cringleford, and Hethersett, and at Long Stratton. These locations all fall within the Norwich Policy Area.

1.2.3 Consultants Mott MacDonald were appointed to undertake the JCS Habitats Regulations Assessment (HRA) in accordance with the Conservation of Habitats and Species Regulations 2010. The report of the Assessment was published in February 2010, before the JCS was adopted. In brief, the HRA concluded that it was unlikely that the JCS policies would have a significant direct or indirect impact on European and Ramsar designated sites.

1.2.4 However, the report highlighted some areas of uncertainty regarding potential in combination and cumulative effects associated with water resources, water quality, water efficiency, growth and tourism on such sites, because of the dependence on the effectiveness and implementation of mitigation measures and actions required to avoid adverse impact on site integrity. These measures included:

- The allocation of greenspace to protect specific natural assets and designated sites to be implemented through area action plans and related green infrastructure measures; and
- The implementation of water infrastructure improvements (for water resources and waste water treatment) and water efficiency measures as recommended in the Water Cycle Study and delivered through Anglian Water's Water Resource Management Plan.

1.2.5 The report also recognised that, whereas green infrastructure requirements can, in large part, be delivered through the planning system, delivery of the necessary water resource mitigation measures lie beyond the powers of the local planning authorities. Hence water availability was identified as a major uncertainty at the time, and the longer-term water resources issue had not yet been fully resolved.

1.2.6 However, to allow the conclusion of the JCS HRA to stand, a process was agreed whereby restrictions on abstraction could be introduced at Costessey until such time as Anglian Water had evaluated a range of potential solutions and secured funding for a programme of further measures. The preparation of the GNLP provides an opportunity to review progress.

1.2.7 The JCS requires allocations to be made to ensure at least 36,820 homes can be delivered between 2008 and 2026, of which approximately 33,000 will be within the Norwich Policy Area. Specific site allocations are identified in five separate Local Plan documents:

- Broadland Site Allocations Development Plan Document (2016);

- Growth Triangle Area Action Plan (2016)
- Norwich site allocations and site specific policies local plan document (2014);
- South Norfolk Local Plan Site Specific Allocations and Policies Document (2015);
- Wymondham Area Action Plan (2015); and,
- Long Stratton Area Action Plan (2016).

1.3 The Greater Norwich Local Plan (GNLP)

1.3.1 The Submission Draft Greater Norwich Local Plan (GNLP) Strategy document follows previous iterations of the emerging Greater Norwich Local Plan. It provides the broad strategy for growth in Greater Norwich from 2018 to 2038 and supporting thematic policies.

1.3.2 The draft plan identifies where growth needed to 2038 should be built. There are plans in place already which identify locations for around 80% of the new homes, along with new jobs, green spaces and additional infrastructure (Section 1.2 above). The main locations include brownfield sites in Norwich, the major urban extension to its north-east, expanded strategic employment sites such as the Norwich Research Park and growth at most of our towns and larger villages. This plan provides additional sites in these areas to create new communities and support growth of the economy, as well as sites in villages to support rural services.

1.3.3 When adopted, the GNLP will supersede the current JCS and the Site Allocations documents in each of the three districts except for the smaller villages in South Norfolk that will be addressed through a new South Norfolk Village Clusters Housing Allocations Local Plan; and the Diss, Scole and Burston area, for which a Neighbourhood Plan is being produced which will allocate sites in these locations. The GNLP will not replace existing adopted Area Action Plans for Long Stratton, Wymondham and the Growth Triangle (NEGT) or Neighbourhood Plans, though in some cases additional allocations are made through the GNLP in these areas. The GNLP will also not amend existing adopted Development Management policies for the three districts except in circumstances where limited policy changes, identified in this plan, are required to implement the strategy.

1.4 Alternatives for housing numbers

1.4.1 Housing numbers considered under 'Reasonable Alternatives' are those described in the Interim Sustainability Appraisal that accompanied the Regulation 18 Growth Options and Site Proposals Consultation that took place between January and March 2018. Alternatives were considered in the draft plan which was consulted upon in early 2020. These alternatives consider the Objectively Assessed Need (OAN) for housing, whether there is any reason that the plan's housing requirement should be higher or lower than OAN, the need for a buffer for delivery to account for some areas under-delivering the target, and the role of windfall development in relation to the housing requirement and delivery buffer. The four reasonable alternatives are

1. GNLP Housing Requirement is equal to OAN. Delivery buffer is approx 20%. Forecast Windfall Housing does not form part of the Delivery Buffer.
2. GNLP Housing Requirement is equal to OAN. Delivery buffer is approx 20%. Forecast Windfall Housing forms part of the 20% Delivery Buffer.
3. GNLP Housing Requirement is equal to OAN plus net Housing Response to City Deal. Delivery buffer is approx.. 20% of OAN. Forecast Windfall Housing does not form part of the Delivery Buffer.
4. GNLP Housing Requirement is equal to OAN plus net Housing Response to City Deal. Delivery buffer is approx.. 20% of OAN. Forecast Windfall Housing forms part of the 20% Delivery Buffer.

1.4.2 The Sustainability Appraisal preferred alternative 2 and the Councils agreed this alternative for the purposes of the Regulation 18 Growth Options and Site Proposals Consultation.

1.4.3 The GNLP identifies a housing need of 40,541 homes between 2018 and 2038. Of that number, 5,240 of these homes were delivered between 1 April 2018 and 31 March 2020, including student

accommodation and housing for the elderly. The remainder will be delivered through the allocation of new sites for 10,704 new homes, and the delivery of existing allocations (at April 2020) totalling 31,452 homes by 2038. Policy 7.5 delivers 800 homes on small-scale sites, and there is a limited allowance of 1,296 windfall homes to demonstrate delivery of some of the total housing figure. The number of planned homes in the GNLP therefore totals 49,492 homes, which is equivalent to a 22% housing delivery buffer above need. The GNLP considers the housing delivery buffer necessary to ensure the delivery of the housing requirement of 40,541, mitigating risk of non-delivery of sites to ensure meeting the local need. It also provides for the potential for higher growth rates.

1.4.4 Of the 10,704 allocations, a minimum of 1,200 of these homes will be allocated in a separate South Norfolk Village Clusters Housing Site Allocations document and 250 homes will be provided through allocations in the Diss and Area Neighbourhood Plan

1.4.5 There is a contingency site at Costessey for around 800 homes should it be needed due to low delivery of allocated housing sites elsewhere.

1.4.6 The majority of new homes will be in and around Norwich, and in the Cambridge Norwich Tech Corridor, especially Cringleford, Hethersett and Wymondham. Density of housing across the Plan area will be 25 per hectare, with a higher density of 40 per hectare in Norwich.

1.5 Employment land

1.5.1 The plan allocates employment sites totalling around 360 hectares including strategic employment land in Norwich City Centre, the Norwich Airport area, Wymondham, Longwater, Rackheath, the Broadland Business Park, Broadland Gate, Norwich Research Park, Hethel, and the Food Enterprise Park. The majority of the allocated land is a carry-over of existing allocations, with a new large (46.5ha) allocation at Norwich Airport and smaller new allocations at Norwich Research Park and at Hethel.

1.6 What are the Habitats Regulations?

1.6.1 The Conservation of Habitats and Species Regulations 2017 are often abbreviated to the 'Habitats Regulations'. The Habitats Regulations interpret the European Birds Directive and Habitats Directive into English and Welsh law. For clarity, the following paragraphs consider the case in England only, with Natural England given as the appropriate nature conservation body. In Wales, the Natural Resources Wales is the appropriate nature conservation body.

1.6.2 Special Protection Areas and Special Areas of Conservation are defined in the regulations as a 'European site'. The Regulations regulate the management of land within European sites, requiring land managers to have the consent of Natural England before carrying out management. Byelaws may also be made to prevent damaging activities and if necessary land can be compulsorily purchased to achieve satisfactory management.

1.6.3 The Regulations define competent authorities as public bodies or statutory undertakers. Competent authorities are required to make an appropriate assessment of any plan or project they intend to permit or carry out, if the plan or project is likely to have a significant effect upon a European site. The permission may only be given if the plan or project is ascertained to have no adverse effect upon the integrity of the European site. If the competent authority wishes to permit a plan or project despite a negative assessment, imperative reasons of over-riding public interest must be demonstrated, and there should be no alternatives to the scheme. The permissions process would involve the Secretary of State and the option of consulting the European Commission. In practice, there will be very few cases where a plan or project is permitted despite a negative assessment. This means that a plan such as the Greater Norwich Local Plan, has to be assessed and the assessment must either decide that it is likely to have no significant effect on a European site or ascertain that there is no adverse effect upon the integrity of the European site.

1.7 Habitats Regulations Assessment process

1.7.1 A Habitats Regulations Assessment is a step-by-step process which is undertaken in order to determine whether a project or plan will have a likely significant effect (LSE) upon a European site. Before a competent authority can authorise a proposal, they must carry out an Appropriate Assessment of a plan or project in line with procedure detailed in the Habitats Regulations. The whole procedure is called a Habitats Regulations Assessment, with the Appropriate Assessment being part of one of four stages necessary to complete an HRA. The results of the HRA are intended to influence the decision of the competent authority when considering whether or not to authorise a proposal.

Stages of Habitats Regulations Assessment

1.7.2 *Stage One of the HRA is 'Screening'.* Plans or projects will be investigated for their potential to have a likely significant effect upon a European site. If the plan is likely to have a significant effect, and is not connected to the management of the site, an Appropriate Assessment is required. Proposals that are found not likely to have a significant effect upon a European site will be 'screened out' at this stage and no further investigation will be required.

1.7.3 *Stage Two of the HRA is the 'Appropriate Assessment and the Integrity Test'.* The plan-making authority must undertake an Appropriate Assessment which seeks to provide an objective and scientific assessment of how the proposed Local Plan may affect the qualifying features and conservation strategies of European sites. The whole plan must be assessed, but a 'scoping' exercise helps decide which parts of the plan have potential to give rise to significant effects and therefore where assessment should be prioritised. Natural England is an important consultee in this process and the public may also be consulted.

1.7.4 The UK Government accepts the definition for the 'integrity' of a site as *'the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which the site is (or will be) designated.'* Other factors may also be used to describe the 'integrity' of a site. The plan-making authority must ascertain, using scientific evidence and a precautionary approach, that the plan will not adversely affect the integrity of a European site, prior to adopting the plan. Information provided in the Appropriate Assessment will be used when considering the Integrity test.

1.7.5 *Stage Three of the HRA is 'Imperative reasons of overriding public interest and compensatory measures'.* If the Competent Authority determines that there are imperative reasons of overriding public interest notwithstanding adverse impacts upon the integrity of the European site, and there are no alternatives, the plan may be given effect. In this case, the plan-making authority must notify the Secretary of State at least 21 days before authorisation; the Secretary of State may give a direction prohibiting the plan from being given effect. It is unlikely that this stage would be reached.

Consultations

1.7.6 Natural England is a statutory consultee, and so should be consulted at the draft and final plan stage. The public may also be consulted if it is considered appropriate, for example if the appropriate assessment is likely to result in significant changes to the plan. In practice, Natural England has been consulted upon previous stages of the Local Plan and HRA, and the HRA has been included in previous public consultations of the emerging Local Plan.

Iterations and revision

1.7.7 The process is iterative; the conclusions of an earlier assessment may result in changes to the plan, and so a revision of the assessment would be required. If the revised assessment suggests further plan changes, the iteration will continue.

1.7.8 Iterative revisions typically continue until it can be ascertained that the plan will not have an adverse affect on the integrity of any European site.

1.7.9 There are further provisions for rare cases where over-riding public interest may mean that a land-use plan may be put into effect, notwithstanding a negative assessment, where there are no alternatives to development, but these provisions are not expected to be routinely used.

Guidance and good practice

1.7.10 This report has taken account of published guidance and good practice. A key source of information which summaries of legislative requirements, good practice guidance and case law (Tyldesley and Chapman 2013, regularly updated)[1] has been used during the writing of this report.

1.8 Why is Appropriate Assessment required?

1.8.1 The appropriate assessment process is required under the Conservation of Habitats and Species Regulations 2017. Regulation 105 states that

> (1) Where a land use plan—
>
> (a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and
>
> (b) is not directly connected with or necessary to the management of the site,
>
> the plan-making authority for that plan must, before the plan is given effect, make an appropriate assessment of the implications for the site in view of that site's conservation objectives.
>
> (2) The plan-making authority shall for the purposes of the assessment consult the appropriate nature conservation body and have regard to any representations made by that body within such reasonable time as the authority specify.
>
> (3) They must also, if they consider it appropriate, take the opinion of the general public, and if they do so, they must take such steps for that purpose as they consider appropriate.
>
> (4) In the light of the conclusions of the assessment, and subject to regulation 107 (considerations of overriding public interest), the plan-making authority or, in the case of a regional spatial strategy, the Secretary of State must give effect to the land use plan only after having ascertained that it will not adversely affect the integrity of the European site or the European offshore marine site (as the case may be).
>
> (5) A plan-making authority must provide such information as the appropriate authority may reasonably require for the purposes of the discharge of the obligations of the appropriate authority under this chapter.
>
> (6) This regulation does not apply in relation to a site which is—
>
> (a) a European site by reason of regulation 8(1)(c); or
>
> (b) a European offshore marine site by reason of regulation 18(c) of the Offshore Marine Conservation Regulations (site protected in accordance with Article 5(4) of the Habitats Directive.

1.8.2 The plan-making authorities, as defined under the Regulations, are Broadland District Council, Norwich City Council and South Norfolk District Council and the appropriate nature conservation body is Natural England.

1.8.3 This report is the assessment carried out on behalf of these three local authorities under Regulation 105. At Regulation 19 Submission Draft stage, this report determines any changes required so that the GNLP may progress to being adopted in due course.

[1] Tyldesley, D., & Chapman, C. (2013). *The Habitats Regulations Assessment Handbook*. DTA Publications Ltd

1.9 European sites

1.9.1 European sites (also known as Natura 2000/N2K sites) are sites that have been classified or designated by Defra/Welsh Ministers or Natural England/Natural Resources Wales, as Special Protection Areas (SPA) for those sites where birds are the special interest feature, and Special Areas of Conservation (SAC) where the habitats or species (other than birds) are the reason for designation.

1.9.2 Wetlands of International Importance, designated under the Ramsar Convention, are not European sites. There may often be considerable overlap between the special interest features and boundaries of Ramsar sites, with European sites. However, for the purposes of planning and development, Government policy in the National Planning Policy Framework states that Ramsar sites should be treated equally/in the same way as European sites. The same applies for sites under consideration for designation including potential Special Protection Area (pSPA), Site of Community Importance (SCI), Candidate Special Area of Conservation (cSAC) and proposed Ramsar sites. In summary, although Appropriate Assessment only legally applies to European sites, National Planning Policy provides further obligations to ensure that all those sites previously mentioned are subject to assessment. Therefore, for the purposes of this report, the term 'European site(s)' refers to all sites under assessment.

1.9.3 As the interest features of the Ramsar sites are usually very similar to the interest features of the SPA and / or SAC designations, both geographically and ecologically, the assessment below, for clarity does not always repeat Ramsar site names. The assessment does however consider Ramsar sites fully, and if an assessment for a Ramsar site was found to differ from that for the respective SPA / SAC, this would be clearly identified.

1.9.4 European Marine Site (EMS) is a term that is often used for a SPA or SAC that includes marine components (i.e. land/habitats up to 12 nautical miles out to sea and below the Mean High Water Mark). A European Marine Site does not have a statutory designation of its own but is designated for the same reasons as the relevant SPA or SAC, and because of this they are not always listed as a site in their own right, to save duplication. For the purpose of this document, an EMS is referred to as an Inshore SPA (or SAC) with Marine Components and it will be made clear if an SPA/SAC has marine components.

1.10 Iteration and consultation

1.10.1 An interim Habitats Regulations Assessment (HRA)[2] was published in January 2018. It is available on Greater Norwich Development Partnership's website[3]. It identifies in detail how internationally designated ecological habitats and wildlife sites in the wider area, including the Broads and the Norfolk coast, would be potentially impacted by recreational pressures likely to be generated by growth in Greater Norwich. It looked at 22 strategic growth options.

1.10.2 This report was issued to stakeholders, and a meeting was held with stakeholders on 3rd April 2018. Attendees were John Hiskett (Norfolk Wildlife Trust) and Andrea Kelly (Broads Authority) with Nick Sibbett (The Landscape Partnership (TLP)) and Paul Harris (Broadland District Council) representing Greater Norwich Development Partnership.

1.10.3 A second stakeholder meeting was held on 28th March 2019. Attendees were Nick Sibbett (TLP, for Greater Norwich Development Partnership), Paul Harris (Broadland District Council, for Greater Norwich Development Partnership), Mike Jones (Norfolk Wildlife Trust), Kate Warwick (Environment Agency), Louise Oliver (Natural England), and Philip Pearson (RSPB).

1.10.4 Anglian Water representatives were unable to attend the stakeholder meetings but provided advice by email.

1.10.5 A Habitats Regulations Assessment for the Regulation 18 Draft Plan dated December 2019 was published in January 2020. It was open for public consultation with the draft Local Plan from 29

[2] Interim Habitats Regulations Assessment of Greater Norwich Local Plan Issues and Options stage, The Landscape Partnership, December 2017
[3] https://gnlp.jdi-consult.net/documents/pdfs_14/reg.18_gnlp_interim_hra.pdf

January - 16 March 2020. Comments on the HRA were received from Natural England and Norfolk Wildlife Trust. Comments on the Local Plan relating to HRA issues were also received from RSPB. Concerns were expressed on a number of topics such as whether the Local Plan policies were strong enough to prevent harm to European sites, over-reliance on studies not yet completed including Water Cycle Study and Green Infrastructure Recreation Avoidance Strategy, and impact of the Norwich Western Link Road.

1.10.6 The Habitats Regulations Assessment of Greater Norwich Local Plan has been and continues to be subject to consultation with the public, including key stakeholders such as nature conservation bodies, and with Natural England as the statutory consultee. Comments are welcomed and revisions may be made to any later versions of the Habitats Regulations Assessment as a result.

1.11 Legislative changes

1.11.1 At the time of writing there is some uncertainty on any future legislative change to the Habitats Regulations. This assessment is written on the basis of current legislation but might require updating in due course.

2 European sites potentially affected

2.1 European sites

2.1.1 A search using Natural England's Interactive 'Magic Map'[4] revealed that a number of European sites lie within, near or partially within the Greater Norwich area, i.e. the land within Broadland District Council (outside the Broads Authority area), South Norfolk District Council or Norwich City Council areas. Each European site is listed below with a brief description of its qualifying features and is shown on Figure 01. Because some of the European sites cross Local Planning Authority boundaries and because some of the European Sites are made up of component Sites of Special Scientific Interest (SSSI) which are located in different Planning Authority areas, no attempt has been made to differentiate those European sites and Ramsar sites which lie within the plan area, which lie within the boundaries of Broadland District, South Norfolk District and Norwich City Council areas and which are within Local Authority Districts beyond these.

2.1.2 Component Sites of Special Scientific Interest forming the European sites, and the European site Conservation Objectives, are presented in Appendix 1.

River Wensum SAC		
Site description summary	**Qualifying features**[5]	
A calcareous lowland river considered one of the best areas in the UK for Ranunculion fluitantis and Callitricho-Batrachion vegetation. Also significant for the presence of Brook Lamprey, Bullhead and Desmoulin's whorl snail. One of the best areas in the UK for the native White-clawed Crayfish. At the upper reaches, run-off from calcareous soils rich in plant nutrients feeds beds of submerged and emerged vegetation characteristic of chalk streams. Lower, the chalk is overlain by boulder clay, resulting in aquatic plant communities more characteristic of rivers with mixed substrates.	3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation
	7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae
	91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)
	1092	Austropotamoblus pallipes (White-clawed (or Atlantic steam) Crayfish)
	1163	Cottus gobio (Bullhead)
	1096	Lampetra planeri (Brook Lamprey)
	1016	Vertigo moulinsiana (Desmoulin's whorl snail)

Norfolk Valley Fens SAC		
Site description summary	**Qualifying features**[6]	
A series of valley-head spring-fed fens, typified by black-bog-rush - blunt-flowered rush *Schoenus nigricans* - *Juncus subnodulosus* mire. There are also transitions to reedswamp, other fen and wet grassland types, and gradations from calcareous fens into acidic flush communities. Plant species present include marsh helleborine *Epipactis palustris*, narrow-leaved marsh-orchid *Dactylorhiza traunsteineri*, and alder *Alnus glutinosa* which forms carr woodland in places	4010	North Atlantic wet heaths with Erica tetralix
	4030	European dry heaths
	6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (*important orchid sites)
	6410	Molinia meadows on calcareous, peaty, or clayey-silt-laden soils (Molinion caeruleae)

[4] http://magic.defra.gov.uk/home.htm
[5] Taken from the Natura 2000 Standard data form for site UK0012647 River Wensum SAC dated 25-01-16.
[6] Taken from the Natura 2000 Standard data form for site UK0012892 Norfolk Valley Fens SAC dated 25-01-16.

by streams. Marginal fens associated with pingos-pools originating from the thawing of large blocks of ice at the end of the last Ice Age support several large populations of Desmoulin's whorl snail *Vertigo moulinsiana*.	7150	Depressions on peat substrates of the Rhynchosporion
	7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae
	7230	Alkaline fens
	91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)
	1355	Lutra lutra (Eurasian Otter)
	1166	Triturus cristatus (Great Crested Newt)
	1014	Vertigo angustior (Narrow-mouthed whorl snail)
	1016	Vertigo moulinsiana (Desmoulin's whorl snail)

The Broads SAC/ Broadland SPA, Ramsar		
Site description summary	**SAC qualifying features**[7]	
A low-lying wetland complex connecting the Bure, Yare, Thurne, and Waveney River systems. Wetland habitats form a mosaic of open water, reedbeds, carr woodland, grazing marsh, and fen meadow, with an extensive network of medieval peat excavations. The Site boasts a rich array of flora and fauna. The SPA is designated for supporting a number of rare or vulnerable (Article 4.1) Annex I bird species during the breeding season. In addition, the SPA is designated for supporting regularly occurring migratory (Article 4.2) species during the breeding season and over winter.	3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.
	3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation
	6410	Molinia meadows on calcareous, peaty, or clayey-silt-laden soils (Molinion caeruleae)
	7140	Transition mires and quaking bogs
	7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae
	7230	Alkaline fens
	91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)
	4056	Anisus vorticulus (Little whorlpool ram's-horn snail)
	1903	Liparis loeselii (Fen Orchid)
	1355	Lutra lutra (Eurasian Otter)
	1166	Triturus cristatus (Great Crested Newt)

[7] Taken from the Natura 2000 Standard data form for site UK0013577 The Broads SAC dated 25-01-16.

	1016	Vertigo moulinsiana (Desmoulin's whorl snail)
	SPA qualifying features[8]	
	A056	Anas clypeata (Shoveler) (over winter)
	A050	Anas penelope (Wigeon) (over winter)
	A051	Anas strepera (Gadwall) (over winter)
	A021	Botaurus stellaris (Bittern) (breeding)
	A081	Circus aeruginosus (Marsh Harrier) (breeding)
	A082	Circus cyaneus (Hen Harrier) (over winter)
	A037	Cygnus columbianus bewickii (Bewick's Swan) (over winter)
	A038	Cygnus cygnus (Whooper Swan) (over winter)
	A151	Philomachus pugnax (Ruff) (over winter)
	Ramsar qualifying features[9]	
	H7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae Calcium-rich fen dominated by great fen sedge (saw sedge).
	H7230	Alkaline fens Calcium-rich springwater-fed fens.
	H91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) Alder woodland on floodplains, and the Annex II species
	S1016	Vertigo moulinsiana (Desmoulin`s whorl snail)
	S1355	Lutra lutra (Eurasian Otter)
	S1903	Liparis loeselii Fen Orchid
		Cygnus columbianus bewickii, NW Europe (Tundra (Bewick's) Swan)
		Anas penelope (Eurasian Wigeon)
		Anas strepera strepera (Gadwall)
		Anas clypeata (Shoveler)

Breydon Water SPA/Ramsar/SPA (Marine)		
Site description summary	**SPA qualifying features**[10]	
An inland tidal estuary at the mouth of the River Yare and its confluence with the Rivers Bure and Waveney. Extensive areas of mud-flats form the only tidal flats on the east Norfolk coast. The Site also features much	A037	Cygnus columbianus bewickii (Bewick's (Tundra) Swan) (over winter)
	A151	Philomachus pugnax (Ruff) (concentration)

[8] Taken from the Natura 2000 Standard data form for site UK9009253 Broadland SPA dated 25-01-16.
[9] Taken from the Ramsar Information Sheet for Broadland dated 21-09-94.
[10] Taken from the Natura 2000 Standard data form for site UK9009181 Breydon Water SPA dated 25-01-16.

floodplain grassland, which lies adjacent to the intertidal areas. It is internationally important for wintering waterbirds, some of which feed in the Broadland Ramsar that adjoins this site at Halvergate Marshes. This SPA is part of the Breydon Water European Marine Site.	A140	Pluvialis apricaria (Golden Plover) (over winter)
	A132	Recurvirostra avosetta (Avocet) (over winter)
	A193	Sterna hirundo (Common Tern) (breeding)
	A142	Vanellus vanellus (Northern Lapwing) (over winter)
		Waterbird assemblage
	Ramsar qualifying features[11]	
	Internationally important waterfowl assemblage (greater than 20000 birds)	
	Over winter the site regularly supports internationally important numbers of: Bewick's Swan Cygnus columbianus bewickii and Lapwing Vanellus vanellus	

Great Yarmouth North Denes SPA		
Site description summary	**Qualifying features**[12]	
Low dunes stabilised by marram grass *Ammophila arenaria* with extensive areas of grey hair-grass *Corynephorus canescens*. The Site supports important numbers of little tern *Sterna albifrons* that feed in waters close to the SPA. This SPA is part of the Great Yarmouth North Denes European Marine Site (EMS).	A195	Sterna albifrons (Little Tern) (breeding)

Winterton – Horsey Dunes SAC		
Site description summary	**Qualifying features**[13]	
The only significant area of dune heath on the east coast of England, which occur over an extremely base-poor dune system, and include areas of acidic dune grassland as an associated acidic habitat. These acidic soils support swamp and mire communities, in addition to common dune slack vegetation, including creeping willow *Salix repens* subsp. *argentea* and Yorkshire fog *Holcus lanatus*. The drought resistant grey hair-grass *Corynephorus canescens* is characteristic of open areas.	2110	Embryonic shifting dunes
	2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")
	2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)
	2160	Dunes with Hippophae rhamnoides
	2190	Humid dune slacks
	1166	Triturus cristatus (Great Crested Newt)

[11] Taken from the Ramsar Information Sheet for Breydon Water dated Feb 2000.
[12] Taken from the Natura 2000 Standard data form for site UK9009271 Great Yarmouth North Denes SPA dated 25-01-16.
[13] Taken from the Natura 2000 Standard data form for site UK0013043 Winterton – Horsey Dunes SAC dated 25-01-16.

Paston Great Barn SAC		
Site description summary	**Qualifying features**[14]	
Nationally, this is an extremely rare example of a maternity roost of barbastelle bats *Barbastella barbastellus* in a building. A 16th century thatched barn with associated outbuildings. The maternity colony inhabits many crevices and cracks in the roof timbers.	1308	Barbastella barbastellus (Barbastelle bat) (permanent population)

Overstrand Cliffs SAC		
Site description summary	**Qualifying features**[15]	
Vegetated soft cliffs composed of Pleistocene clays and sands, subject to common cliff-falls and landslips. Vegetation undergoes cycles whereby ruderal-dominated communities develop on the newly exposed sands and mud, succeeded by more stable grassland and scrub vegetation. In areas where freshwater seepages occur there are fen communities and occasional perched reedbeds. The diverse range of habitats support a large number of invertebrate species.	1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts

Waveney & Little Ouse Valley Fens SAC		
Site description summary	**Qualifying features**[16]	
Calcareous fen containing extensive beds of great fen-sedge *Cladium mariscus*. Purple moor-grass – meadow thistle *Molinia caerulea – Cirsium dissectum* fen-meadows, associated with the spring-fed valley fen systems, occur in conjunction with black bog-rush – blunt-flowered rush *Schoenus nigricans – Juncus subnodulosus* mire and calcareous fens with great fen-sedge. Grazed areas of fen-meadow are more species-rich, and frequently support southern marsh-orchid *Dactylorhiza praetermissa*.	6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)
	7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae
	1016	Vertigo moulinsiana (Desmoulin's whorl snail)

[14] Taken from the Natura 2000 Standard data form for site UK0030235 Paston Great Barn SAC dated December 2015.
[15] Taken from the Natura 2000 Standard data form for site UK0030232 Overstrand Cliffs SAC dated December 2015.
[16] Taken from the Natura 2000 Standard data form for site UK0012882 Waveney and Little Ouse Valley Fens SAC dated December 2015.

Redgrave and South Lopham Fens Ramsar	
Site description summary	**Qualifying features**[17]
An extensive area of spring-fed valley fen at the headwaters of the River Waveney which supports a variety of fen plant community types, including *Molinia*-based grasslands, mixed sedge-fen, and reed-dominated fen. Small areas of wet heath, sallow carr, and birch woodland also occur, and the Site is known to support the fen raft spider *Dolomedes plantarius*.	The site is an extensive example of spring-fed lowland base-rich valley, remarkable for its lack of fragmentation.
	The site supports many rare and scarce invertebrates, including a population of the fen raft spider *Dolomedes plantarius*. This spider is also considered vulnerable by the IUCN Red List.
	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.

Breckland SPA/SAC		
Site description summary	**SPA qualifying features**[18]	
A gently rolling plateau underlain by cretaceous chalk bedrock covered with thin deposits of sand and flint. The climate and free-draining soils has produced dry heath and grassland communities. Pingos with biological interest occur in some areas. The highly variable soils of Breckland, with underlying chalk being largely covered with wind-blown sands, have resulted in mosaics of heather-dominated heathland, acidic grassland and calcareous grassland that are unlike those of any other site. Breckland is the most extensive surviving area of the rare sheep's fescue – mouse-ear hawkweed – wild thyme *Festuca ovina – Hieracium pilosella – Thymus praecox* grassland type. A number of the water bodies within the site support populations of amphibians, including great crested newts *Triturus cristatus*.	A133	Burhinus oedicnemus (Stone Curlew) (breeding)
	A224	Caprimulgus europaeus (Nightjar) (breeding)
	A246	Lullula arborea (Woodlark) (breeding)
	SAC qualifying features[19]	
	2330	Inland dunes with open Corynephorus and Agrostis grasslands
	3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation
	4030	European dry heaths

[17] Taken from the Ramsar Information Sheet for Redgrave and South Lopham Fen Ramsar dated May 2005.
[18] Taken from the Natura 2000 Standard data form for site UK9009201 Breckland SPA dated December 2015.
[19] Taken from the Natura 2000 Standard data form for site UK0019865 Breckland SAC dated December 2015.

	6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)
	91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)
	1308	Barbastella barbastellus (Barbastelle bat)
	1166	Triturus cristatus (Great Crested Newt)

Benacre to Easton Bavents Lagoons SAC/Benacre to Easton Bavents SPA		
Site description summary	**SAC qualifying features**[20]	
Situated on the east coast of Suffolk, this site includes semi-natural broadleaved woodland, tall fen vegetation, shingle, dunes and grassland, saltmarsh and coastal lagoons. The habitats are important for breeding, wintering and passage birds. There are a series of percolating lagoons that have formed behind shingle barriers and are a feature of a geomorphologically dynamic system. The site supports a number of specialist lagoonal species. The SPA is part of the Benacre to Easton Bavents European Marine Site.	1150	Coastal lagoons
	91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)
	SPA qualifying features[21]	
	A021	Botaurus stellaris (Bittern) (breeding)
	A081	Circus aeruginosus (Marsh Harrier) (breeding)
	A195	Sterna albifrons (Little Tern) (breeding)
Component SSSI/s[22]		
Pakefield to Easton Bavents SSSI	Covers 735.45ha and contains 51 units. 48.73% of area in Favourable condition, 38.98% of area in Unfavourable-Recovering condition, 8.73% of area in Unfavourable-No change condition, 3.11% Unfavourable-Declining condition, 0.45% of area Partially destroyed.	
SAC Conservation Objectives[23]		
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.	
SPA Conservation Objectives[24]		
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving	• The extent and distribution of the habitats of the qualifying features	

[20] Taken from the Natura 2000 Standard data form for site UK0013104 Benacre to Easton Bavents Lagoons SAC dated December 2015.
[21] Taken from the Natura 2000 Standard data form for site UK9009291 Benacre to Easton Bavents SPA dated December 2015.
[22] Condition status taken from Natural England data on 17th June 2019.
[23] Taken from Natural England's European Site Conservation Objectives for Benacre to Easton Bavents Lagoons SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.
[24] Taken from Natural England's European Site Conservation Objectives for Benacre to Easton Bavents SPA dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice, and should be used in conjunction with the Regulation 35 Conservation Advice Package for the EMS.

the aims of the Wild Birds Directive, by maintaining or restoring;	• The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.

Dew's Ponds SAC		
Site description summary	**Qualifying features**[25]	
A series of 12 ponds located in rural East Suffolk, in formerly predominantly arable land. Great Crested Newt has been found in all ponds. Some of the arable land has been converted to grassland and there are also hedgerows and ditches.	1166	Triturus cristatus (Great Crested Newt)

The Wash and North Norfolk Coast SAC (inshore)		
Site description summary	**Qualifying features**[26]	
The Wash is the largest embayment in the UK and is connected to the North Norfolk Coast via sediment transfer systems. Together The Wash and North Norfolk Coast form one of the most important marine areas in the UK and European North Sea coast, and include extensive areas of varying, but predominantly sandy, sediments subject to a range of conditions. Communities in the intertidal include those characterised by large numbers of polychaetes, bivalve and crustaceans. Subtidal communities cover a diverse range from the shallow to the deeper parts of the embayments and include dense brittlestar beds and areas of an abundant reef-building worm ('ross worm') Sabellaria spinulosa. The embayment supports a variety of mobile species, including a range of fish, otter Lutra lutra and common seal Phoca vitulina. The extensive intertidal flats provide ideal conditions for common seal breeding and hauling-out. This SAC is part of The Wash and North Norfolk Coast European Marine Site.	1110	Sandbanks which are slightly covered by sea water all the time
	1140	Mudflats and sandflats not covered by seawater at low tide
	1150	Coastal lagoons
	1160	Large shallow inlets and bays
	1170	Reefs
	1310	Salicornia and other annuals colonizing mud and sand
	1320	Spartina swards (Spartinion maritimae)
	1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)
	1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)
	1364	Halichoerus grypus (Grey Seal)
	1355	Lutra lutra (Eurasian Otter)
	1365	Phoca vitulina (Harbour/Common Seal)

North Norfolk Coast SPA (marine)/SAC (inshore)/Ramsar		
Site description summary	**SAC qualifying features**[27]	
Important within Europe as one of the largest areas of undeveloped coastal habitat of its	1150	Coastal lagoons

[25] Taken from the Natura 2000 Standard data form for site UK0030133 Dew's Ponds SAC dated December 2015.
[26] Taken from the Natura 2000 Standard data form for site UK0017075 The Wash and North Norfolk Coast SAC dated December 2015.
[27] Taken from the Natura 2000 Standard data form for site UK0019838 North Norfolk Coast SAC dated December 2015.

type, supporting intertidal mudflats and sandflats, coastal waters, saltmarshes, shingle, sand dunes, freshwater grazing marshes, and reedbeds. Large numbers of waterbirds use the Site throughout the year. In Summer, the Site and surrounding area are important for breeding populations of four species of tern, waders, bittern *Botaurus stellaris*, and wetland raptors including marsh harrier *Circus aeruginosus*. In Winter, the Site supports large numbers of geese, sea ducks, other ducks and waders using the Site for roosting and feeding. The Site is also important for migratory species during the Spring and Autumn. This SAC is part of the North Norfolk Coast European Marine Site. The SPA is designated for supporting a number of rare or vulnerable (Article 4.1) Annex I bird species during the breeding season. In addition, the SPA is designated for supporting regularly occurring migratory (Article 4.2) species during the breeding season and over winter. This SPA is part of The Wash and North Norfolk Coast European Marine Site (EMS).	1220	Perennial vegetation of stony banks
	1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)
	2110	Embryonic shifting dunes
	2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")
	2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")
	2160	Dunes with Hippophae rhamnoides
	2190	Humid dune slacks
	1355	Lutra lutra (Eurasian Otter)
	1395	Petallophyllum ralfsii (Petalwort)
	1166	Triturus cristatus (Great Crested Newt)
	SPA qualifying features[28]	
	A040	Anser brachyrhynchus (Pink-footed Goose) (over winter)
	A050	Anas penelope (Wigeon) (over winter)
	A021	Botaurus stellaris (Bittern) (breeding)
	A675	Branta bernicla bernicla (Dark-bellied Brent Goose) (over winter)
	A143	Calidris canutus (Red Knot) (over winter)
	A081	Circus aeruginosus (Marsh Harrier) (breeding)
	A132	Recurvirostra avosetta (Avocet) (breeding and over winter)
	A195	Sterna albifrons (Little Tern) (breeding)
	A193	Sterna hirundo (Common tern) (breeding)
	A191	Sterna sandvicensis (Sandwich Tern) (breeding)
	WATR	Waterfowl assemblage
	Ramsar qualifying features[29]	
	The site is one of the largest expanses of undeveloped coastal habitat of its type in Europe. It is a particularly good example of a marshland coast with intertidal sand and mud, saltmarshes, shingle banks and sand dunes. There are a series of brackish-water lagoons and extensive areas of freshwater grazing marsh and reed beds.	

[28] Taken from the Natura 2000 Standard data form for site UK9009031 North Norfolk Coast SPA dated December 2015.
[29] Taken from the Ramsar Information Sheet for North Norfolk Coast dated 13-06-08.

	Supports at least three British Red Data Book and nine nationally scarce vascular plants, one British Red Data Book lichen and 38 British Red Data Book invertebrates.
	98462 waterfowl peak count in winter (assemblages of international importance)
	Sterna sandvicensis (Sandwich Tern) (breeding)
	Sterna hirundo (Common Tern) (breeding)
	Sterna albifrons (Little Tern) (breeding)
	Calidris canutus (Red Knot) (over winter)
	Anser brachyrhynchus (Pink-footed Goose) (over winter)
	Branta bernicla bernicla (Dark-bellied Brent goose) (over winter)
	Anas penelope (Wigeon) (over winter)
	Anas acuta (Pintail) (over winter)

Southern North Sea cSAC (offshore and inshore)		
Site description summary	**Qualifying features**[30]	
The Southern North Sea site has been recognised as 'an area of predicted persistent high densities of harbour porpoise'. Therefore, the Southern North Sea site has been submitted to the EU and is a candidate for designation as an Inshore and Offshore SAC for the Annex II species, Harbour Porpoise. The Southern North Sea site extends down the North Sea from the River Tyne, south to the River Thames. The aim of the SAC is to support the maintenance of harbour porpoise populations throughout UK waters (the Southern North Sea supports higher number of porpoises compared to many other parts of their UK range). Seasonal differences in the use of the site by harbour porpoises which show the elevated densities of the species in some parts of the site compared to others during the summer and winter, have been identified. The main threats to harbour porpoise are from incidental catch, pollution and noise/physical disturbance.	1351	Phocoena phocoena (Harbour Porpoise)

Outer Thames Estuary SPA (marine)/Outer Thames Estuary Extension pSAC (marine)		
Site description summary	**Qualifying features**[31]	
This SPA is entirely marine and is designated because its habitats support 38% of the Great British population of over-wintering Red-throated Diver *Gavia stellata*, a qualifying species under Article 4.1 of the Birds	A001	Gavia stellata (Red-throated Diver) (over winter)

[30] Taken from the Natura 2000 Standard Data Form for Site UK0030395 Southern North Sea SCI dated January 2017.
[31] Taken from the Natura 2000 Standard Data Form for Site UK9020309 Outer Thames Estuary SPA dated December 2015.

Directive. The Outer Thames Estuary SPA covers vast areas of marine habitat off the east coast between Caister-on-Sea, Norfolk in the north, down to Margate, Kent in the south. The habitats covered by the SPA include marine areas and sea inlets where Red-throated Diver is particularly susceptible to noise and visual disturbance e.g. from wind farms and coastal recreation activities. Threats from effluent discharge, oil spillages and entanglement/drowning in fishing nets are significant. The addition of two new protected features and associated boundary amendments was consulted on in January to July 2016. The proposed extension would afford protection for Little tern and Common tern foraging areas, enhancing protection already afforded to their feeding and nesting areas in the adjacent coastal SPAs (Foulness SPA, Breydon Water SPA and Minsmere to Walberswick SPA).		

Haisborough, Hammond and Winterton SAC		
Site description summary	**Qualifying features**[32]	
The site lies off the north east coast of Norfolk and contains a series of sandbanks as well as Sabellaria spinulosa reefs. Small numbers of Harbour Porpoise are regularly observed within the site boundary and a large colony of breeding Grey Seal is known adjacent to the site.	1110	Sandbanks which are slightly covered by sea water all the time
	1170	Reefs
	1364	Halichoerus grypus (Grey Seal)
	1351	Phocoena phocoena (Harbour Porpoise)

2.2 Other relevant Plans or Projects potentially affecting these sites

2.2.1 In addition to the potential impact that Greater Norwich Local Plan may have upon the nearby European sites described above, other plans/documents/guidance may also impact upon these sites, in particular the plans of the neighbouring local planning authorities. The most relevant documents are likely to be those concerned with planning policy and infrastructure provision.

2.2.2 The neighbouring local authorities as well as those that contain European sites within the Zone of Influence of the Greater Norwich Growth Area are listed below. Their planning policy documents, including adopted and emerging Local Plans are likely to be the most relevant when considering potential for cumulative impacts upon European sites.

- Broads Authority
- Breckland Council
- Borough Council of King's Lynn & West Norfolk
- North Norfolk District Council
- Great Yarmouth Borough Council
- East Suffolk Council
- Mid Suffolk District Council

[32] Taken from the Natura 2000 Standard data form for site UK0030369 Haisborough, Hammond and Winterton SAC dated December 2015.

- West Suffolk Council
- South Holland District Council
- Boston Borough Council
- East Lindsey District Council
- Norfolk County Council – Minerals site specific allocations DPD
- South Norfolk Village Clusters Housing Site Allocations Local Plan in progress. This plan will include sites for a minimum of 1,200 homes in addition to the 1,392 already committed in the village clusters.

2.2.3 Plans or projects connected with infrastructure planning and management also have potential to impact European sites, whether alone or in combination. Such plans are listed below and will need to be considered further in the report.

- Greater Norwich Water Cycle Study
- Green Infrastructure Strategy (2007) and Green Infrastructure Delivery Plan (2009)
- River Basin Management Plan for the Anglian Water Basin District (2015)
- North East Norwich Growth Triangle Green Infrastructure Delivery Plan (2016)
- East Broadland Green Infrastructure Delivery Plan (2015)
- West Broadland Green Infrastructure Project Plan (2018)
- Norwich River Wensum Green Infrastructure Strategy (not currently available)
- Green Infrastructure sections of the Wymondham Area Action Plan (2015)
- Green Infrastructure sections of the Long Stratton Area Action Plan (2016)

2.2.4 A proposed Norwich Western Link Road is proposed by Norfolk County Council which is working towards a planning application and subsequent construction. See https://www.norfolk.gov.uk/roads-and-transport/major-projects-and-improvement-plans/norwich/norwich-western-link/ for further details.

2.2.5 Anglian Water's 2019 Water Resource Management Plan outlines how Anglian Water will maintain a sustainable balance between water supplies and demand over the next 25 years. It describes how it proposes to maintain that balance by investing in demand management – metering and water efficiency for example – and developing new water resources. No new boreholes or increase in abstraction from existing boreholes are explicitly proposed.

2.2.6 Anglian Water's Long Term Water Recycling Plan (September 2018) sets out a long term strategy to identify the need for further investment by Anglian Water at existing water recycling centres or within foul sewerage catchments to accommodate the anticipated scale and timing of growth. Growth in Greater Norwich as well as in the remainder of the area served by Anglian Water is included in this plan.

3 Likely significant effects of Greater Norwich Local Plan on European sites

3.1 Necessary or connected with management of European sites?

3.1.1 It is considered that the Greater Norwich Local Plan is not necessary for, or connected with, the nature conservation management of any European sites.

3.2 Likely significant effects which might arise from policies and allocations within Greater Norwich Local Plan

3.2.1 There are a number of potential impacts arising from policies and allocations within the Local Plan. These include

- Increased recreational pressure: trampling of vegetation or disturbance to birds, or providing difficulties in site management for example.
- Increased pressure on water resources: The new homes and businesses would require a reliable source of drinking water which could affect wetlands from increased abstraction.
- Pollution impacts: Waste water discharge from new developments, including foul water discharges may reduce the water quality of rivers or wetlands.
- Pollution impacts: Additional traffic movements increasing emissions to air such as Nitrogen oxides NOx and Sulphur dioxide SO_2 which have the potential to result in adverse impact upon vegetation or water quality.
- Increased urbanisation of the countryside: predation by cats, fly-tipping, increase in arson, vandalism of European site infrastructure such as fences, disturbance of livestock, etc.

3.2.2 There are no direct land-take impacts on any European site in the allocations.

3.2.3 Impacts arising from any of the above factors upon a designated European site could occur result from development of a single large housing site, for example in the immediate vicinity of Norwich; or through a combination of dispersed developments elsewhere in the Growth Area. Some European sites would be more vulnerable to recreational pressure whilst others might be more sensitive to other types of impacts. In isolated incidences, a European designated site may be sensitive to several different types of impact, for example both recreational pressure and an impact upon water resources.

3.2.4 There may be cumulative effects of a large number of smaller developments. For example, the recreational impact on European sites of a small residential development may in itself have imperceptible impact, but the total recreational impact of a number of residential developments could be significant.

3.2.5 Detailed information on likely significant effects were provided in the January 2018 Interim Habitats Regulations Assessment. Since that date, new procedures for the Habitats Regulations process have come into force, where less attention to detail is required at 'likely significant effect' stage and more attention to detail is required at 'appropriate assessment' stage.

3.3 Conclusion of assessment of likely significant effect ('screening' stage)

3.3.1 It is concluded that the Regulation 19 Submission Draft Local Plan, may be likely to have a significant effect upon one or more European sites. The Local Plan is not necessary for, or connected with, nature conservation management of European sites. It is concluded that an appropriate assessment of impacts is necessary.

3.4 Introduction to the Appropriate Assessment

3.4.1 This appropriate assessment considers impacts of each policy individually, and for the whole plan. Cumulative impacts with other plans or projects are then considered.

3.4.2 Where there are policy gaps or incomplete mitigation in place, these are mentioned so that there is clarity on further steps to be taken.

3.4.3 Assessment is carried out on each policy below prior to in-combination effects being assessed.

4 Appropriate Assessment of Policy 1 'The Growth Strategy'

4.1 Policy summary

4.1.1 To meet the need for around 40,541 new homes to 2038, sites are committed for a minimum of 49,492 new homes which is equivalent to a 22% housing delivery buffer above need.

4.1.2 To aid delivery of 33,000 additional jobs and support key economic sectors, 360ha of employment land is allocated and employment opportunities are promoted at the local level. Supporting infrastructure will be provided in line with policies 2 and 4. Environmental protection and enhancement measures including further improvements to the green infrastructure network will be delivered.

4.1.3 Growth is distributed in line with the settlement hierarchy to provide good access to services, employment and infrastructure. It is provided through urban and rural regeneration, along with sustainable urban and village extensions. The majority of the housing, employment and infrastructure growth is focussed in the Strategic Growth Area illustrated on the Key Diagram which includes Greater Norwich's key part of the Cambridge Norwich Tech Corridor, including the Norwich urban area, Hethersett and Wymondham and key strategic jobs sites at Hethel and the Norwich Research Park. Growth is also focussed in towns and villages to support vibrant rural communities. For more detail please see the key diagram of the Local Plan.

4.1.4 Housing commitments are distributed as follows:

Area	Existing deliverable commitment (April 2018)	New allocations (including uplift)	Total deliverable housing commitment 2018 - 2038
Norwich urban area	26,019	6,672	32,691
The main towns of Wymondham, Aylsham, Diss (with Roydon), Harleston and Long Stratton	5,151	1,655	6,806
The key service centres of Acle, Blofield, Brundall, Hethersett, Hingham, Loddon / Chedgrave, Poringland / Framingham Earl, Reepham and Wroxham	2,984	695	3,679
Village clusters in Broadland District	1,146	482	4,220
Village clusters in South Norfolk District	1,392	Minimum 1,200	
Total	**36,692**	**10,704**	**47,396**
Homes delivered through policy 7.5			**800**
Windfall allowance			**1,296**
Overall total			**49,492**

4.1.5 Policies 7.1 to 7.5 provide details of this distribution and the Sites document provides individual site policies. Individual site policies for villages in South Norfolk will be in the South Norfolk Village Clusters Housing Site Allocations Plan. Additional "windfall" housing growth will be

considered within settlement boundaries, in service village clusters and on sites up to three dwellings in all parishes.

4.1.6 Strategic employment sites which are protected from other forms of development are Norwich city centre; the Norwich Airport area; Browick Interchange, Wymondham; Longwater; Rackheath; Broadland Business Park; Broadland Gate; Norwich Research Park; Hethel and the Food Enterprise Park at Easton/Honingham.

4.1.7 Smaller scale employment sites are also allocated in urban areas, towns and large villages to provide local job opportunities, supporting small businesses and a vibrant rural economy. The sustainable growth strategy will be supported by improvements to the transport system, green infrastructure and services.

4.2 Assessment of construction impacts on any European site

4.2.1 Policy does not suggest that any allocations will be within or close to any European site such that there would be construction impacts such as land-take or disturbance from the construction activities.

4.3 Increased recreational pressure: potential impacts.

4.3.1 Recreational use of a European site has the potential to:

- Cause damage to soils and vegetation through trampling and erosion;
- Cause disturbance to sensitive species, particularly ground-nesting birds and wintering wildfowl.
- Cause eutrophication as a result of dog fouling;
- Cause littering, giving rise to potential animal mortality, nutrient enrichment and small-scale pollution
- Prevent appropriate management or exacerbate existing management difficulties, for example grazing being restricted.

4.3.2 Different types of European sites are subject to different types of recreational pressures and have different vulnerabilities. Studies across a range of species have shown that the effects from recreation can be complex. Recreational pressure is likely to be generated by an increase in residents associated with the new housing but less so for employment development.

Trampling pressure and mechanical/abrasive damage

4.3.3 Most types of terrestrial European site can be affected by trampling, which in turn causes soil compaction and erosion, depending upon soil conditions, or changes to the vegetation. Motorcycle scrambling and off-road vehicle use can cause serious erosion, as well as disturbance to sensitive species but significant impacts can also arise from walkers, cyclists and horses, resulting in reduction in vegetation cover.

4.3.4 Studies in a variety of vegetation types have shown that low-growing, mat-forming grasses appear most resistant to trampling, while tall forbs (non-woody vascular plants other than grasses, sedges, rushes and ferns) were considered least resistant. Cover of hemicryptophytes and geophytes (plants with buds below the soil surface) was heavily reduced after two weeks of trampling pressure, but had recovered well after one year and as such these were considered to have resilience in respect of trampling pressure. Chamaephytes (plants with buds above the soil surface) were least resilient to trampling.

4.3.5 In practice this can mean changes to the vegetation community compromising the viability of taller growing fragile plant species in favour of species which have a leaf rosette which lies flat to the ground and often leading to a loss of rarer, more vulnerable plant species in favour of more robust, common species.

4.3.6 Dune habitat and other coastal ecosystems, heathlands and wetlands are amongst the most sensitive to trampling and erosion, whereas woodlands and meadowlands are more robust.

Eutrophication

4.3.7 Walkers with dogs contribute to pressure on sites through nutrient enrichment via dog fouling and the total volume of dog faeces deposited on sites can be surprisingly large. For example, at Burnham Beeches National Nature Reserve over one year, Barnard[33] estimated the total amounts of urine and faeces from dogs as 30,000 litres and 60 tonnes respectively. Nutrient-poor habitats such as heathland, chalk grassland and certain types of fen vegetation are particularly sensitive to the fertilising effect of inputs of phosphates, nitrogen and potassium from dog faeces. Most impacts occur close to paths.

Disturbance

4.3.8 The deleterious effect of disturbance on birds stems from the fact that the birds are expending energy unnecessarily and the time they spend responding to disturbance is time that is not spent feeding. This can adversely affect the 'condition' and ultimately survival of the birds. In addition, displacement of birds from one feeding site to others can increase the pressure on the resources available within the remaining sites, as they have to sustain a greater number of birds. Disturbance of ground-nesting birds may result in the bird leaving the nest and exposing the eggs or chicks to predators or bad weather. Disturbed areas become unavailable for nesting even though the habitat may otherwise be suitable.

4.3.9 Walkers with dogs have potential to cause greater disturbance to fauna as dogs are less likely to keep to marked footpaths and move more erratically and this has been shown by number of studies, with birds flushing more readily, more frequently, at greater distances and for longer periods of time when dogs are present, particularly off-lead.

4.3.10 Where increased recreational use is predicted to cause adverse impacts on a site, avoidance and mitigation should be considered. Avoidance of recreational impacts at European sites involves location of new development away from such sites or provision of an alternative recreational resource.

Site management

4.3.11 Public access can cause conflict between people and habitats in terms of compromising effective site management. Dogs, rather than people, tend to be the cause of many management difficulties, notably by worrying grazing animals or necessitating moving cattle away from footpaths.

4.4 European sites unlikely to be affected by recreational impacts

4.4.1 It is not likely that there would be a significant effect from recreational impacts on seven European sites. These sites are tabulated below, and the reasons why recreational impact is considered unlikely are given in the second column.

European site	**Reason for no recreational impact**
Paston Great Barn SAC	Small site with no public access
Overstrand Cliffs SAC	More-or-less vertical cliff which, although open to the public, in practice is rarely walked upon
Dews Pond SAC	Small site with no public access
Southern North Sea cSAC	Offshore site with no pedestrian access and low levels of dispersed recreational boating activity
Outer Thames Estuary SPA / pSAC extension	Offshore site with no pedestrian access and low levels of dispersed boating activity
Haisborough, Hammond and Winterton SAC	Offshore site with no pedestrian access and low levels of dispersed boating activity

[33] Barnard, A. (2003) Getting the Facts - Dog Walking and Visitor Number Surveys at Burnham Beeches and their Implications for the Management Process. *Countryside Recreation*, 11, 16 - 19

European site	Reason for no recreational impact
River Wensum SAC	Aquatic interest is not affected by bankside recreation and public access to the river is in any case very limited. Boating is very limited in the SAC but encouraged downstream beyond the SAC in Norwich

4.5 European sites potentially affected by recreational impacts

4.5.1 European sites potentially affected by recreational impacts are tabulated below. Distances from development at which recreational impacts might occur are summarised from Panter and Liley's 2016 visitor study in Norfolk[34]. Most visits are for dog walking or walking with no dog.

European site	Potential recreational impact
Norfolk Valley Fens SAC	These are a group of small scattered fens, some with limited value for walking / dog walking except for very local users, and varied access arrangements and parking facilities. Those fens with public access but no car park are likely to be visited by those within 1km only. Buxton Heath, Holt Lowes and Marsham Heath all have car parks, and some other sites might have informal roadside parking even if no car park exists. The median distance travelled by car to these sites is 3 – 6km although few resident people travel further than 2km.
The Broads SAC / Broadland SPA/Ramsar	Many of the habitats present in the designated sites of the broads are wet or very wet and unlikely to be favoured for recreation, with public usage almost entirely restricted to well managed nature reserves which feature boat-trails, footpaths and boardwalks. Most car parks serving the Broads / Broadland are located in villages, where walking is not the prime attraction, or associated with nature reserves where visitors are well managed. Recreational impact might occur where there is a large car park providing access to habitat used by SPA birds where a nature conservation organisation is not managing the land as a nature reserve, but these locations are rare. Such localised examples might, for example include minor disturbance to bird species on Halvergate by people walking out from public car parks in Yarmouth (anecdotal evidence), but such usage is restricted for the most part to long-distance walkers along the footpath and there is no access to habitats at marsh level. Although few people may walk along the riverside adjacent to Halvergate Marshes, each walker could create significant disturbance (Andrea Kelly, meeting on 3rd April 2018). Other recreational impact would occur where development is within walking distance of a Broadland site, such as in adjacent or close-by villages, with, again, access being restricted to floodbank footpaths.

[34] Panter, C., & Liley, D. (2016). Visitor Surveys at European Protected Sites across Norfolk during 2015 and 2016. Footprint Ecology

European site	Potential recreational impact
	Where people drive from home to a car park on the Broads, the median distance travelled is up to 28km although few resident people travel further than 5km. The number of boats on the Broads is controlled by Broads Authority, a Competent Authority under the Habitats Regulations. Boat numbers are out of the control of the Greater Norwich Development Partnership. Currently the Broads Authority does not limit the number of boat licences it issues, and the number of licences is declining.
Breydon Water SPA / Ramsar	Although a 'coastal' site, this is not an attractive site for family recreational purposes as access requires either a boat trip or a walk from Great Yarmouth Railway Station or from public parking within the town in order to gain access it. There are very limited circular walk opportunities, the only option including crossing and then walking alongside the busy A47 for a short distance. There are few visitors, who almost all come by car, and the median distance travelled is 12km although few resident people travel further than 5km.
Great Yarmouth North Denes SPA	This site has an attractive beach in association with other coastal amenities. Car parks, including free beach-front parking, are readily available but appear to be used by holiday-makers because the median distance travelled by those who come from home is just 1km.
Winterton – Horsey Dunes SAC	The site has an attractive beach and circular walk options including a long-distance trail taking in the fragile dune system, with other major attractions including the seal colony. Car parks are readily available. Visitors do not keep to paths and can walk anywhere on or behind the dunes. The median distance to various parts of this site is up to 44km at Horsey Gap although visitor rates are very low after 5km distance.
Waveney and Little Ouse Valley Fens SAC	The Redgrave and South Lopham Fen component of the SAC is attractive to many visitors, and visitors are actively encouraged by the landowner and site manager, Suffolk Wildlife Trust. A modest increase in visitors would be acceptable as paths through the site are routed so as to avoid vulnerable habitats. Sensitive vegetation away from the path network is in any case avoided by visitors as usually wet or uncomfortable to walk on. Other component fens are small, and scattered fens, with limited value for walking / dog walking except for very local users, and varied access arrangements and parking facilities. Where parking exists, there is usually a managed access scheme in place. Those fens with public access are likely to be regularly visited by those within 2km only, similar to the Norfolk Valley Fens. There is no visitor data.
Redgrave and South Lopham Fen Ramsar	The Redgrave and South Lopham Fen component of the SAC is attractive to many visitors, and visitors are actively encouraged by the landowner and site manager, Suffolk Wildlife Trust. A modest increase in visitors would be

European site	Potential recreational impact
	acceptable as paths through the site are routed so as to avoid vulnerable habitats. Sensitive vegetation away from the path network is in any case avoided by visitors as usually wet and uncomfortable to walk on. As above, the fen with public access is likely to be regularly visited by those within 2km only, similar to the Norfolk Valley Fens. There is no visitor data.
Breckland SPA / SAC	Research has shown that even at honeypot sites, nesting of woodlark and nightjar continues. Modest increases in recreation are unlikely to affect these species. Nesting sites for stone-curlew are either closed for public access (heathland sites) in the nesting season, or are on farmland with no public access so disturbance would not occur. No likely recreational effect except in circumstances where a large increase in visitors to a little-disturbed part of the SPA would occur such as a large allocation adjacent to Breckland. Trampling of SAC vegetation is generally low, with visitors from distance often visiting a few honeypot visitor centres outside the SAC e.g. High Lodge visitor centre, West Stow Heath Country Park. Median distances travelled by people coming from home vary from 23 – 47km but visitor rates are low after 10km distant.
Benacre to Easton Bavents SAC / SPA	Despite being remote from towns and villages, and with limited parking, this site is (in the experience of the report authors) already very popular with, and vulnerable to disturbance effects from visitors travelling from Norwich and Broadland towns and villages. The visitors then use several local circular walking routes, including a long-distance trail, which take in sections of coastal reedbed, heathland and dune systems. Some increase in recreational effect could occur as a consequence of major development in the southern Broads area or from site allocations in close proximity. There is no data on distance travelled but it could be reasonably similar to other eastern coastal sites with a 10km threshold distance.
The Wash and North Norfolk Coast SAC	The site is an attractive and accessible coast designated for marine and intertidal habitats / species. Car parks are readily available. The median distance travelled from home varies from 2km to 30km for most parts of this site, with Morston (S) having a median distance of 41km but visitor rates are lower for residents living over 14km distant.
North Norfolk Coast SPA / SAC / Ramsar	The site is a very attractive and accessible coast with a range of habitats and landscapes, and including a variety of circular walk options and a long-distance path. Car parks are readily available. Car parks are readily available. The median distance travelled from home varies from 2km to 29km for most parts of this site, with Morston (S) having a

European site	Potential recreational impact
	median distance of 41km but visitor rates are very low for residents beyond 14km.

4.5.2 The Green Infrastructure and Recreational Impact Avoidance Strategy (GIRAMS) uses this data to set impact risk zones for each European site.

4.5.3 Using the Local Plan documents available at the time, Panter and Liley (2016) estimated the increase in visitor numbers from the housing allocated at that time. The Local Plan documents used were

- Broadland District Council Site Allocations DPD (Adopted 2016)
- Broadland District Council Growth Triangle Area Action Plan (Adoption Imminent at that time)
- Norwich City Site Allocations Plan (Adopted 2014)
- South Norfolk Council Site Allocations and Policies Document (Adopted 2015)
- South Norfolk Council Wymondham Area Action Plan (Adopted 2015)
- Breckland Site Specific policies and Proposals (Adopted 2012)
- North Norfolk Site Allocations (Adopted 2011)
- Great Yarmouth Borough Council, Awaiting Development Policies and Site Allocations DPD, Previous allocations used (2001)
- Borough Council of King's Lynn and West Norfolk Preferred Options for Detailed Policies and Sites 2013, not yet adopted at that time

4.5.4 Key findings relating to housing change, links to allocated new housing at that time and implications included:

- A 14% increase in access by Norfolk residents to the sites surveyed (in the absence of any mitigation), as a result of new housing during the current plan period.
- The increase will be most marked in the Brecks, where an increase of around 30% was predicted. For the Broads the figure is 14%; 11% for the East Coast; 9% for North Norfolk; 15% for Roydon & Dersingham; 28% for the Valley Fens and 6% for the Wash (note these figures relate to the surveyed access points only and to visits by Norfolk residents).

4.5.5 With a median dog walk length of around 3km, it is considered that a housing allocation within 1km of a European site access point (i.e. a site freely available for public entry / use) is likely to result in an increased visitor use of that European site, especially for regular dog walking, by people walking to the European site. Housing allocations greater than 1km distant are less likely to generate increased visitor use from people walking to that site, and above 1.5km distance there is likely to be little or no increased visitor use by people walking to the entry point. European sites with car parking provision would be likely to experience impacts resulting from development within a larger radius as described in the table above.

4.5.6 For parts of the North Coast, the Broads, and parts of the East Coast, the links between an increase in local housing and recreation impacts are less clear as these sites attract a high number of visitors coming from a wide geographical area, both inside and outside Norfolk. There are therefore likely to be pressures from overall population growth both from within the county and further afield.

4.5.7 Visitor access to European sites by the Greater Norwich Local Plan allocations compared to the 2016 study would be an increase in visitors because of the additional allocations in the GNLP and also bearing in mind completed housing development since the study. The distribution of the allocations in Greater Norwich are such that the European sites likely to have the larger increases in visitor numbers would be The Broads / Broadland, Winterton – Horsey Dunes, Norfolk Valley Fens (Marsham Heath), and North Norfolk Coast SPA / SACs / Ramsar.

4.6 Increased pressure on water resources

4.6.1 The new homes would require a reliable source of drinking water. Proposed employment facilities would need a source of water for the domestic needs of the employees, and might also need water for manufacturing or other industrial processes such as washing.

4.6.2 The east and southeast of England have been identified by Environment Agency in 2013 as a region which is currently experiencing considerable pressure on water resources with the deficit situation within both the Essex and Suffolk Water and the Anglian Water areas being considered to be 'serious' at the present time due to limited water resources and high levels of demand. This situation is unchanged across 4 different future growth and climatic scenarios[35] and the study concluded that both the Anglian Water area and Essex and Suffolk Water areas are currently experiencing 'Serious Stress', this being the highest level.

4.6.3 The Environment Agency has advised the Secretary of State that the areas classified as under 'Serious Stress' should be designated as 'Areas of serious water stress' for the purposes of Regulation 4 of the Water Industry (Prescribed Condition) Regulation 1999 (as amended).

4.6.4 Anglian Water (AW), in its 2019 Water Resources Management Plan has identified the relevant Resource Zones (RZ) to this Greater Norwich Local Plan area as being Norwich and the Broads, Norfolk Rural, and the North Norfolk Coast. The AW assessment takes into account planned and predicted growth and climate change. All Resource Zones are forecast to be in deficit (i.e. not enough water being available) to 2045 prior to measures in the plan intended to prevent the deficit being implemented.

4.6.5 Pressure on water resources resulting in reduction in water levels or flow in groundwater-fed wetlands, and in streams, rivers and waterbodies would be a likely consequence of increased water demand requiring greater water abstraction from groundwater or surface water. Surface water abstraction could have a direct impact upon water levels and stream flow; groundwater abstraction would potentially lead to reduced flows in any watercourses which derive a significant proportion of their water from spring flow and also reduced surface and sub-surface flow through fen and mire habitats. Wetland European sites which are dependent upon a groundwater source may become too dry to support special interest features.

4.6.6 Water resources in the region are already under considerable pressure. For example, Environment Agency's Review of Consents work in 2009 resulted in the closure of a Public Water supply borehole in the vicinity of Sheringham and Beeston Regis Commons SSSI (part of the Norfolk Valley Fens SAC). Work is ongoing towards a closure of Public Water Supply borehole/s in the vicinity of Catfield Fen (part of the Broads SAC) to prevent negative impact upon the flora and fauna of this groundwater-fed site (Environment Agency, *pers comm* November 2019). Closure is expected to be in March 2021[36].

4.6.7 Abstraction at a future major water supply borehole, could potentially give rise to an impact upon designated groundwater dependant wetland sites more than 10km away, depending upon the depth of the borehole, the nature of the strata from which abstraction is taking place and its relationship with local wetland sites. It is assumed that any future borehole might be as much as 10km from any proposed development location.

4.6.8 Depleted riverine flows may also result in an increased number, and severity of, saline incursion events and will also increase the concentration of pollutants and nutrients possibly to above set targets. Ground water abstraction from near-surface aquifers can also lead to saline incursion into the aquifer resulting in damage to coastal wetland sites, which receive a proportion of their irrigating water from groundwater.

4.6.9 A new body, Water Resources East (WRE) has been set up to address water demand deficit. Initial results for WRE from the extensive programme of technical work were originally to have

[35] Environment Agency and Natural Resources Wales. 2013. Water Stressed Areas Final Classification https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/244333/water-stressedclassification-2013.pdf
[36] https://www.anglianwater.co.uk/news/anglian-water-begins-next-stage-of-norwich-to-ludham-water-project-to-protect-local-conservation-area/ accessed on 14th December 2020

been published in Spring 2017 and an emerging strategy was published in January 2018[37]. The strategy will create a more integrated approach to long-term water resource management and planning in due course.

4.6.10 Anglian Water's 2019 Water Resource Management Plan outlines how Anglian Water will maintain a sustainable balance between water supplies and demand over the next 25 years. It describes how it proposes to maintain that balance by investing in demand management – metering and water efficiency for example – and developing new water resources. Anglian Water's draft 2019 Water Resources Management Plan indicates that it will manage water resources by 'managing demand' from existing and proposed customers (ie supplying less water per customer) and by transferring water from other areas, with no increase in abstraction and no new abstractions. No new boreholes or increase in abstraction from existing boreholes are explicitly proposed.

4.7 Pollution impacts: Waste water discharge.

4.7.1 Reduction of water quality, from increased discharges of sewage and surface water drainage, or from pollution incidents, either during, or after, construction has potential to impact upon riparian and wetland European sites downstream of a settlement. The types of habitat which might be sensitive to that change would depend very much upon the nature and scale of the impact.

4.7.2 It is assumed that waste water discharge from developments, including foul water discharges, would be treated, however may give rise to elevated levels of nitrates, and, depending upon whether phosphate stripping equipment is in place, phosphate, downstream of the discharge point. There is also potential for chemical spillages, or STW failure, to lead to discharge of untreated effluent.

4.7.3 Anglian Water is currently in the process of finalising a Long Term Water Recycling Plan which will set out a long term strategy to identify the need for further investment by Anglian Water at existing water recycling centres or within foul sewerage catchments to accommodate the anticipated scale and timing of growth. Anglian Water has a statutory duty to prevent pollution from sewage, so whilst there is a theoretical risk from water recycling centres there is also a mechanism in place to prevent the risk. Permits issued by Environment Agency are set for each water recycling centre and are specific to ensure sufficient water quality at the discharge point.

4.7.4 The impacts of water pollution would depend entirely on the nature of the effluent or chemicals being released and whether the release is slow or sudden, but may potentially result in consequences such as fish kill, extinction of invertebrate taxa, which are more sensitive to pollution or changes in Biological Oxygen Demand (BOD), loss of taxa of water plants which require low nutrient levels or eutrophication of floodplain fen habitats. These impacts could potentially affect Annex II European designated species such as white clawed crayfish, Desmoulins whorl snail, brook lamprey or bullhead, directly or indirectly and may also result in the loss of Annex I habitats such as Ranunculion fluitantis and Callitricho-Batrachion vegetation.

4.8 Pollution impacts: Additional traffic movements increasing emissions to air.

4.8.1 The main airborne pollutants of concern in the context of their potential to give rise to adverse impacts upon European sites are oxides of nitrogen (NOx), ammonia (NH_3) and sulphur dioxide (SO_2).

4.8.2 The primary pollutants SO_2, NO and NO_2 are oxidised in the atmosphere to form SO_4^{2-} and NO_3^- respectively, while NH_3 reacts with these oxidised components to form NH_4^+ (ammonium). These pollutants know as aerosols can travel long distances, and together with primary pollutants can be deposited in the form of wet or dry deposition[38].

4.8.3 The Air Pollution Information System (APIS) provides a useful summary of the main pollutants, the effects they have on vegetation and other features for which European sites might be designated. Concentrations and deposition of air pollutants are assessed against a range on

[37] http://www.wateresourceseast.com/wp-content/uploads/2018/08/HR-S_1288-WRE-Strategy-document-JAN18.pdf
[38] http://www.apis.ac.uk/starters-guide-air-pollution-and-pollution-sources

criteria to protect both human health and the environment. Environmental criteria include critical loads[39] for nitrogen deposition (kg Nitrogen ha^{-1} $year^{-1}$) and acid deposition and critical levels for ammonia (µg m^{-3}), sulphur dioxide (µg m^{-3}), nitrogen dioxide (µg m^{-3}), and ozone (ppb hours). There are some critical loads for heavy metals but these are not currently used to assess impacts. There are no critical levels or loads for other pollutants but in some cases there are other assessment criteria such as environmental quality standards (EQS) and environmental assessment levels (EAL) which are not relevant to the present study.

4.8.4 NOx can have a directly toxic effect upon vegetation, but in addition to this, higher concentrations of NOx or ammonia within the atmosphere will lead to greater rates of nitrogen deposition to soils, leading to an increase in soil fertility, which can have a serious deleterious effect on the quality of semi-natural, nitrogen-limited terrestrial habitats. Most SAC sites are designated for the vegetation they support, and this is generally vegetation which would respond adversely to nutrient input, including increased input of Total Nitrogen. Both SO2 and NOx can lead to acid deposition and acidification of vegetation.

4.8.5 Housing development would be likely to give rise to increased levels of NOx arising from increased vehicle movements. Ammonia release is generally associated with increased numbers of agricultural livestock and certain industrial processes, including the production of energy from waste, and is unlikely to arise as a direct consequence of the Great Norwich Growth Plan.

4.8.6 The table below summarises the main airborne pollutants and discusses the mechanisms by which these might potentially impact upon European sites.

Pollutant	**Source**	**Potential effects on European sites**	**Significance**
Sulphur Dioxide SO_2	SO_2 emissions are overwhelmingly influenced by the output of power stations and industrial processes that require the combustion of coal and oil, and to a lesser extent, motor vehicles.	Both wet and dry deposition of SO_2 acidifies soils and freshwater, and consequently alters the species composition of vegetation and hence associated animal communities. Some habitats will be more at risk than others depending on soil type and buffering capacity. The significance of impacts depends on levels of deposition and the sensitivity of the habitat.	It is not anticipated that the development of the Growth Area would necessitate construction of new power-producing facilities and the demographic of local industry is unlikely to shift towards the types of processes which would result in high levels of combustion. Total SO_2 emissions have decreased substantially in the UK since the 1980s and SO2 deposition is not considered to have potential to give rise to significant effects on vegetation and is not considered to be a significant factor in the context of this study
Ammonia (NH_3)	Ammonia is released following decomposition of animal wastes. Levels will increase with expansion in numbers of livestock and certain specific industrial processes, including the production of energy from waste	Ammonia can give rise to an adverse effect on vegetation through deposition and the consequent eutrophication of vegetation, leading to changes in the species composition of vegetation and hence associated animal communities. Some habitats will be more at risk than others depending on the	The nature of the industries associated with employment allocations in the Greater Norwich Growth Area are as yet uncertain, do not provide a clear source of ammonia emissions. Significant release of NH3 is unlikely to arise as a direct consequence of the Great

[39] http://www.apis.ac.uk/overview/issues/overview_Cloadslevels.htm

Pollutant	Source	Potential effects on European sites	Significance
		ability of the vegetation type to 'absorb' nutrients without adverse change taking place.	Norwich Growth Plan and is not considered to be a significant factor in the context of this study.
Nitrogen oxides (NOx)	Nitrogen oxides (nitrates (NO_3), nitrogen dioxide (NO_2) and nitric acid (HNO_3)) are produced through combustion processes. About one quarter of the UK's emissions are from power stations, one-half from motor vehicles, and the rest from other industrial and domestic combustion processes.	Deposition of nitrogen oxides can lead to both soil and freshwater acidification. Some habitats will be more at risk than others depending on soil type and buffering capacity. Mosses, liverworts and lichens, which received their nutrients directly from the atmosphere are particularly vulnerable to elevated NOx levels and grey dune and heathland ecosystems are perhaps the most sensitive. In addition, NOx can cause eutrophication of soils and water. This alters the species composition of plant communities and hence associated animal communities. Some habitats will be more at risk than others depending on ability of the vegetation type to 'absorb' nutrients without adverse change taking place.	It is not anticipated that the development of the Growth Area would necessitate construction of new power-producing facilities, but domestic and commercial heating and vehicle emissions could potentially be substantial given the number of proposed homes. The significance of impacts will depend on the background level, levels of deposition and the sensitivity of the habitat. NOx contributes to total N deposition – see below. Traffic-generated air pollution operates close to roads but falls off to almost nothing at a distance of 200m from the road[40].
Total Nitrogen (N)	The pollutants that contribute to nitrogen deposition derive mainly from NOX and NH3 emissions.	Species-rich plant communities with relatively high proportions of slow-growing perennial species, bryophytes and lichens are most at risk from N eutrophication, due to its promotion of competitive and invasive species which can respond readily to elevated levels of N at the expenses of slow-growing species. The eventual impacts include changes in species composition, reduction of plant diversity, loss of sensitive species and an increased rate of succession in wetland ecosystems.	The significance of impacts will depend on levels of deposition and the sensitivity of the habitat, however background levels of Total N deposition across east Norfolk and north Suffolk is typically already within the critical load range for many of the sensitive habitats in the area[41] and in some instances exceed the upper end of the range[42]. Total N is considered to be a potential significant factor in the context of this study for developments in close proximity to European sites with nutrient sensitive vegetation. Across the UK there has been a continued decline in Nitrogen Oxides since 1974,

[40] http://www.standardsforhighways.co.uk/ha/standards/dmrb/vol11/section3/ha20707.pdf

[41] http://www.pollutantdeposition.ceh.ac.uk/content/nitrogen-compounds

[42] http://www.apis.ac.uk/search-location

Pollutant	Source	Potential effects on European sites	Significance
			with emissions in 2017 being around half those in 2000[43].
Ozone (O_3)	A secondary pollutant generated by photochemical reactions from NOx and volatile organic compounds (VOCs). These are mainly released by the combustion of fossil fuels. Reducing ozone pollution is believed to require action at international level to reduce levels of the precursors that form ozone.	Concentrations of O3 above 40 ppb can be toxic to wildlife. Increased ozone concentrations may lead to a reduction in growth and altered species composition in seminatural plant communities.	Background levels in the region are typically below 30ppb[44]. Significant combustion of oil and coal is unlikely to arise as a direct consequence of the Great Norwich Growth Plan and O_3 is not considered to be a significant factor in the context of this study.

4.8.7 The distance over which additional traffic movements might give rise to emissions to air such as Nitrogen oxides NO_x which have the potential to result in adverse impact upon vegetation or water quality is closest to the road network and that, for NOx, levels have fallen to the background level within 200m of the road.

4.8.8 A Natural England literature search study[45] into the effects of specific road transport pollutants, found that, combining evidence from two fumigation experiments and a transect study suggests that NOx is the key phytotoxic component of exhaust emissions. While no new papers relating to roadside buffer zones were identified from recent literature, one group of researchers noted that based on their data and the literature, new road building and road expansion should avoid a buffer zone of up to 100–200m from sensitive sites, particularly those where bryophytes are an important component of habitats.

4.8.9 It is therefore surmised that the area affected by traffic emissions to air can be assumed to closely follow existing road corridors within the Growth Area and it is also assumed that any future road construction would be largely within the Growth Area.

4.8.10 The vegetation communities occurring within the study area and potentially at risk from atmospheric nitrogen deposition are as follows. It can be seen that dune systems are particularly vulnerable.

Habitat type (EUNIS code)	Critical load (CL) range (kgN/ha/yr)
Marine habitats	
Mid-upper saltmarshes (A2.53)	20-30
Pioneer & low-mid saltmarshes (A2.54 and A2.55)	20-30
Coastal habitats	

43 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/778483/Emissions_of_air_pollutants_1990_2017.pdf

44 https://uk-air.defra.gov.uk/assets/documents/reports/aqeg/aqeg-ozone-report.pdf

45 https://publications.naturalengland.org.uk/file/5064684469223424

Habitat type (EUNIS code)	Critical load (CL) range (kgN/ha/yr)
Shifting coastal dunes (B1.3)	10-20
Coastal stable dune grasslands (grey dunes) (B1.4)	8-15
Coastal dune heaths (B1.5)	10-20
Moist to wet dune slacks (B1.8)	10-20
Inland surface waters	
Dune slack pools (permanent oligotrophic waters) (C1.16)	10-20
Permanent dystrophic lakes, ponds and pools (C1.4)	3-10
Mire, bog and fen habitats	
Valley mires, poor fens and transition mires (D2)	10-15
Rich fens (D4.1)	15-30
Grasslands and tall forb habitats	
Non-Mediterranean dry acid and neutral closed grassland (E1.7)	10-15
Low and medium altitude hay meadows (E2.2) (includes floodplain grazing marsh)	20-30
Molinia caerulea meadows (E3.51)	15-25
Heathland, scrub & tundra	
Erica tetralix dominated wet heath (lowland)	10-20
Dry heaths (F4.2)	10-20
Forest habitats (general):	
Broadleaved woodland (G1)	10-20

4.8.11 Nitrogen oxide pollution could affect European sites within 200m of new roads, existing roads where daily traffic flows will change by 1,000 AADT or more; or Heavy Duty Vehicle (HDV) flows will change by 200 AADT or more; or daily average speed will change by 10 km/hr or more; or peak hour speed will change by 20 km/hr or more.

4.9 Increased urbanisation of the countryside

4.9.1 This class of impacts is closely related to recreational pressure in the sense that both types of impact arise from having an increased human population close to protected wildlife sites. The list of such impacts is extensive, but some of the more significant ones include the following:

Predation impacts from domestic pets

4.9.2 Predation by domestic cats can potentially affect small mammals, birds, amphibians and reptiles and results in injury, mortality and elevated levels of disturbance.

4.9.3 A survey undertaken in 1997 found that nine million British cats brought home 92 million prey items over a five-month period46.

4.9.4 A large proportion of domestic cats are found in urban situations, and thus increasing urbanisation is likely to lead to increased cat predation. Domestic cats will potentially range up to 5km from home, although 60% of forays are over a distance of less than 400m[47] and the typical average distance for hunting excursions is around 375m[48] according to 20th century studies.

4.9.5 There have been two studies of cat ranging behaviour published in more recent years. These used GPS collars on cats in a village[49] and in Reading[50]. Both studies found that cats within the village and in urban / suburban areas of Reading has smaller home ranges than expected, with most cats in the village featured in the BBC study rarely leaving the village. The cat which roamed furthest in the BBC study went no more than 186m from its home.

4.9.6 The Reading study found that cats in dense urban areas travelled up to 79m, in suburban areas up to 141m and in town edge areas up to 148m. The suppression of cat travelling distances in areas of higher housing density suggests that as urban development progresses into the countryside, the cats on the former development edge would reduce their range in response to expansion of development into the area of countryside they formerly visited.

4.9.7 The predation impact of cats is therefore not cumulative as the introduction of 'new' cats because new development generally results in a reduction of 'existing' cats' range. The recent research suggests that even a 400m buffer zone from European in relation to cat predation may be over-precautionary and the 1km separation from allocations is adequate to prevent cat predation on qualifying features of European sites.

Fly-tipping

4.9.8 Fly-tipping tends to take place only a short distance from development and affects land alongside or close to highways[51]; often the terminus of a minor dead-end road, or adjacent to laybys on busier routes. The distance travelled will vary, but is likely to be usually less than 10km from source. Material dumped in this way is typically either household waste, including 'white goods' and green waste, tyres, or small-scale commercial waste. Depending upon the locality and nature of tipping, there may be harm to watercourses through pollution, damage to sensitive vegetation and in the case of green waste tipping in a woodland or wetland near to home, the release of alien invasive plant species into the wild; the species being dumped often being the more vigorous and hence potentially more invasive garden plants.

4.9.9 A 2016 report by Yorkshire Wildlife Trust[52] found that the greatest amount of fly-tipping and anti-social behaviour on its nature reserves, and theft from their nature reserves, were greatest when there were settlements within 100m. Where there were nature reserves 1km+ distant from the nearest settlement, these activities were still recorded but much less often.

Lighting

4.9.10 Light pollution can affect the foraging and commuting activities of bat species, although there may be minor impacts upon bird behaviour.

[46] Woods, M. et al. 2003. Predation of wildlife by domestic cats Felis catus in Great Britain. *Mammal Review* 33, 2 174- 188

[47] Barratt, D.G. (1997). Home range size, habitat utilisation and movement patterns of suburban and farm cats Felis catus. *Ecography* 20 271-280

[48] Turner, D.C. & Meister, O. (1988). Hunting behaviour of the domestic cat. In: *The Domestic Cat: The Biology of Its Behaviour.* Ed. Turner, D.C. and Bateson, P. Cambridge University Press.

[49] BBC 'The Secret Life of Cats' at https://www.bbc.co.uk/news/science-environment-22567526 and https://www.bbc.co.uk/news/science-environment-22821639 both accessed on 16th December 2020

[50] Hugh J. Hanmer, Rebecca L. Thomas and Mark Fellowes (2017) Urbanisation influences range size of the domestic cat (Felis catus): consequences for conservation. Journal of Urban Ecology, 2017, 1-11

[51] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/595773/Flytipping_201516_statistical_release.pdf

[52] Rylatt, Garside and Robin (2017) Human Impacts on Nature Reserves – The Influence of Nearby Settlements. Yorkshire Wildlife Trust.

- The slower flying broad winged species, which include Barbastelle (a European site designated feature of Paston Great Barn SAC) generally avoid street lights[53] and well-lit areas.
- It is thought that insects are attracted to lit areas from further afield and this may result in adjacent habitats supporting reduced numbers of insects. This is a further impact on the ability of the light avoiding bats to be able to feed.
- Artificial lighting is thought to increase the chances of bats being preyed upon[54]. Many avian predators will hunt bats which may be one reason why bats avoid flying in the day. Observations have been made of kestrels (diurnal raptors) hunting at night under the artificial light along motorways. Lighting can be particularly harmful if used along commuting corridors such as river corridors, tree lines and hedgerows used by bats.

4.9.11 These urbanisation impacts are most likely to occur when a European site is within 1km of a settlement and therefore an allocation within 1km of a European site might increase urbanisation effects.

4.10 Mitigation for potential impacts of Policy 1 'The Growth Strategy'

Locational mitigation

4.10.1 Proposed housing and employment allocations will generally be over 1km from any European site (but see section 11.4 for The Key Service Villages, section 11.5 Village Clusters and section 11.6 Windfall sites). This mitigates for any potential land-take impacts during construction, cat predation, air pollution (no polluting factories are allocated but in any case if they arise would be subject to project-level HRA), urbanisation of the countryside, and recreational impacts of people walking to a European site to start a greenspace walk.

4.10.2 With a median dog walk length of around 3km, it is considered that a housing allocation within 1km of a European site access point (i.e freely available for public entry / use) is likely to result in an increased visitor use of that European site, especially for regular dog walking, by people walking to the European site. Housing allocations greater than 1km distant are less likely to generate increased visitor use from people walking to that site, and above 1.5km distance there is likely to be little or no increased visitor use by people walking to the entry point. The size of an allocation is also related to potential impact, with an allocation of, say, 100 dwellings likely to generate more visitor use of a European site than an allocation of 10 dwellings at the same distance.

4.10.3 It is recommended that all housing development including windfall sites within 1km of a European site would be required to be subject to Habitats Regulations Assessment with regard to recreational impacts. Development is likely to be acceptable only when the development acting alone would not contribute more than a negligible amount of additional recreational pressure. The in-combination effect of that development would of course be subject to the GIRAMS tariff.

Recreational impacts. Provision of green infrastructure

4.10.4 Natural England has advised all Local Planning Authorities in Norfolk (letter of 2019 within the GIRAMS report) that large developments (defined as fifty houses or more) include green space which is proportionate to its scale to minimise any predicted increase in recreational pressure to designated sites, by containing the majority of recreation within and around the developed site. This advice applies across the whole of Norfolk because Natural England considers that development of this scale anywhere in the county could have a likely significant effect on a European site. This advice however was not provided on previous iterations of the GNLP or HRA.

4.10.5 No evidence has been provided to support the threshold of 50 or more dwellings, and it is considered that each and every new home may have an identical impact. Greater Norwich Local Plan requires all residential development to provide green infrastructure, in Policy 3. The requirement is not restricted to 50 or more dwellings as advised by Natural England. If a

[53] http://www.bats.org.uk/data/files/bats_and_lighting_in_the_uk__final_version_version_3_may_09.pdf
[54] http://www.bats.org.uk/data/files/bats_and_lighting_in_the_uk__final_version_version_3_may_09.pdf

development site is too small to provide green infrastructure on site, a contribution secured by S106 to green infrastructure elsewhere will be required.

Recreational impacts. In-combination effects of all housing developments

4.10.6 The forthcoming Green Infrastructure and Recreational Impact Avoidance Strategy (GIRAMS) proposes a tariff based payment taken from residential, and other relevant accommodation e.g. tourist accommodation, that will be used to fund package of avoidance and mitigation measures to be delivered at Habitat Sites. This consists of a team of Rangers to influence visitor behaviour, signage, monitoring, a dog project, providing strategic mitigation projects, and various other tasks. A tariff payment of £205.02 is proposed across Norfolk to provide enough money to pay for the mitigation works.

4.10.7 It is considered that the GIRAMS measures described above would be sufficient that the assessment is able to ascertain no adverse effect upon the integrity of any European site.

Provision of new Country Park

4.10.8 A new Country Park is being created by Broadland District Council between Felthorpe and Horstead[55]. This location is close to the Norwich Growth Triangle, and the site will be designed and managed to attract a larger number of recreational visitors. The Country Park will also act to reduce visitor pressure on European sites by providing an attractive alternative.

Air pollution

4.10.9 No new roads are proposed within 200m of any European site, and the siting of proposed allocations further than 1km from any European site indicates that road traffic associated with the developments would be sufficiently far that there would be no pollution impacts.

Water resource use

4.10.10 A water cycle study has been commissioned by Greater Norwich Development Partnership which looks at these issues. The results of this study will inform this assessment in due course. A draft version of the emerging strategy has been available for this HRA.

4.10.11 Anglian Water Services plans for the long term provision of water supplies through a five yearly planning cycle, through the production of statutory Water Resource Management Plans (WMRP). The WRMP sets out how changes in demand for water and changes in available water in the environment will be managed, including measures to manage how much water customers use (demand management) and measures to provide new sources of supply to current and future customers. The Anglian Water WRMP (2019) indicates that through the introduction of strategic demand management options and supply side schemes within the supply areas serving Greater Norwich Authorities, adequate water supplies will be available up to 2045 and will cater for the proposed levels of growth. No new abstraction from the environment is proposed

4.10.12 The water efficiency assessment has the need for a water use policy that requires developers to build new homes to meet the higher Building Regulation standards of 110l/d. Policy 2 'Sustainable Communities' includes a requirement for Housing development to meet the 'Building Regulations part G (amended 2016) water efficiency higher optional standard' which requires a calculated use of 110l per day.

4.10.13 Consequently it is clear that there would be no impact on European sites from water abstraction as there would be no additional abstraction to meet water needs.

Waste water discharge

4.10.14 The draft Water Cycle Study at Section 4.9.1 contains information which does not make it clear to a non-specialist that issues at Reepham and Foulsham Water Recycling Centres are benign to European sites.

55 https://www.broadland.gov.uk/news/article/301/a_new_country_park_to_be_created_between_felthorpe_and_horsford Press release dated 28th January 2020

4.10.15 At Reepham WRC, which feeds the River Wensum SAC, questions remain over the additional Ammonia, BOD and Phosphate released by the WRC as a result of additional development. For ammonia, the WRC adds 0.46mg/l of ammonia. Whilst the concentration at the mixing point is below the water quality target for River Wensum SAC, it is not clear if the addition of ammonia would be cumulative with other inputs to either meet or exceed the threshold water quality in the Wensum.

4.10.16 At Reepham WRC, the existing BOD at the mixing point exceeds the Wensum's target. It is feasible to reduce the BOD to meet the target if the permit was tightened to the requisite level; however there is no certainty that the permit would be tightened. Additional development would result in additional BOD to be released from the WRC which would enter the Wensum SAC and therefore it could not be ascertained that there would be no adverse affect on the integrity of River Wensum SAC. Local Plan policy has no control over environmental permitting for Water Recycling Centres, so cannot impose a condition that the discharged water meets a certain criterion. Consequently, no residential development at Reepham can proceed until the WRC has a water discharge permit which would ascertain no adverse affect of BOD upon the integrity of River Wensum SAC.

4.10.17 Also at Reepham WRC, the existing phosphate released is above the target for the River Wensum, and additional housing growth would increase the phosphate release. Additional development would result in additional phosphate to be released from the WRC which would enter the Wensum SAC and therefore it could not be ascertained that there would be no adverse affect on the integrity of River Wensum SAC. Local Plan policy has no control over environmental permitting for Water Recycling Centres, so cannot impose a condition that the discharged water meets a certain criterion. Consequently, no residential development at Reepham can proceed until the WRC has a water discharge permit which would ascertain no adverse affect of phosphate upon the integrity of River Wensum SAC.

4.10.18 Similar issues are in place for Foulsham WRC, where there is a question about the cumulative impacts of ammonia and both BOD and phosphate would result in the target for River Wensum being exceeded. Similarly as for Reepham WRC, no residential development can proceed until the WRC has a water discharge permit which would ascertain no adverse affect of BOD and phosphate on the integrity of River Wensum SAC.

4.10.19 Whitlingham Trowse, Freethorpe, and Ditchingham Water Recycling Centres also require changes to their respective discharge consents to allow housing growth. Even by restricting Whitlingham Trowse's discharge consents there would still be deterioration under 10% of water quality but it was not clear from the study whether that deterioration in water quality would be harmful or not to the Broads European sites. Ditchingham WRC is relevant to the South Norfolk Village clusters site Allocations Plan which is separate to the GNLP.

4.11 Assessment of policy 1 'The Growth Strategy'

4.11.1 Subject to satisfactory completion and adoption of the Green Infrastructure and Recreational Avoidance and Mitigation Strategy, it is ascertained that this policy will have no adverse effect upon the integrity of any European site resulting from recreational impacts.

4.11.2 Development (residential and employment) which would rely on its waste water being treated at Reepham WRC, Foulsham WRC, and Freethorpe WRC would result in an adverse affect upon the integrity of River Wensum SAC and the Broads European site. Development which would rely on its waste water being treated at Whitlingham Trowse WRC might result in an adverse affect upon the integrity of River Wensum SAC and the Broads European site Mitigation works at the WRCs to reduce pollutant discharge is outside the control of the Greater Norwich Local Plan and its constituent Councils. Allocations which would use those WRCs to treat waste water cannot at this time be delivered. The allocations may be made, but delivery would be restricted until water quality issues are resolved. This could be by improved analysis and assessment in the forthcoming Water Cycle Study or a phasing delay until sewage works are upgraded. Other ways to ensure that additional pollutants such as phosphate do not enter European sites could include converting land from arable use to semi-natural habitats thus reducing the run-off from that land. Careful calculation may be needed to ensure nutrient neutrality. There would be compatibility

with Biodiversity Net Gain (Policy 3) if off-site habitat creation is needed; the habitat creation for BNG if sited carefully will also reduce nutrient input to rivers. **Completion of the Water Cycle Study is necessary to be clearer about any impacts on European sites**.

5 Appropriate Assessment of Policy 2 'Sustainable Communities'

5.1 Policy summary

5.1.1 All new development must be high quality, contributing to delivering inclusive growth in mixed and sustainable communities and to mitigating and adapting to climate change, assisting in meeting national greenhouse gas emissions targets. Flood risk, water quality protection and energy demand must be minimised. To achieve this, development proposals are required as appropriate to meet a number of sustainability requirements such as reducing domestic energy use, green infrastructure requirements, and resource efficiency.

5.1.2 All major developments will need to submit a Sustainability Statement showing how development will support the sustainability requirements, with housing development optionally making use of tools such as Building for Life 12 (or any successor). All other developments will meet the policy requirements as appropriate dependent on site characteristics and proposed uses. Flood risk assessments will be provided separately.

5.1.3 Policy 2 sets higher standards than those required nationally through Building Regulations for water and energy efficiency and promotes renewable energy generation. Proposals for free standing renewable and/or low carbon energy generation, with the exception of wind energy schemes, will be supported, subject to the acceptability of wider impacts.

5.2 Assessment of Policy 2 'Sustainable Communities'

5.2.1 There are no pathways which could have an adverse effect upon any European site. The requirement for sustainability to be included within development means that the wider environmental impact of development is less than it might otherwise have been, with an indirect link to avoidance of those wider impacts on European sites.

5.2.2 No suitable sites for onshore wind energy development have been submitted to the GNLP for potential allocations. The only ways to display local support, as required by the NPPF, for onshore wind energy are through a Neighbourhood Plan which requires a local referendum or through any other future local plan documents which may consider suitable sites. Wind energy schemes will be supported where the proposal is in a suitable area as identified in a Neighbourhood Plan or other Local Plan documents.

5.2.3 There are no allocations for solar farms or other energy generation schemes, and the safeguard in policy 3 would prevent impact on any European site; applications may need an individual HRA.

5.2.4 It is ascertained that this policy will have no adverse effect upon the integrity of any European site.

6 Appropriate Assessment of Policy 3 'Environmental Protection and Enhancement'

6.1 Policy summary

6.1.1 Development proposals will be required to conserve and enhance the built and historic environment, and the natural environment including protected habitats, species and geodiversity, and to deliver biodiversity net gain, including further development of a multi-functional strategic green infrastructure network.

6.1.2 The policy includes for the payment of a tariff contribution towards the Green Infrastructure and Recreational Impact Avoidance and Mitigation Strategy, currently considered to be around £205.02 per dwelling. This implements the mitigation required for in-combination effects of residential allocations across the Local Plan area.

6.1.3 The policy also requires the provision or enhancement of adequate green infrastructure, either on the development site or nearby, to provide for recreational needs of the residents as an alternative to their visiting European sites. This equates to a minimum of 2ha per 1000 population according to Natural England's ANGS standards for all homes, reducing visitor pressure on European sites.

6.2 Assessment of Policy 3 'Environmental Protection and Enhancement'

6.2.1 There are no pathways which could have an adverse effect upon any European site in themselves. The requirement to conserve and enhance the natural environment would not be achieved if any development was proposed which would have an adverse effect upon any European site, thus protecting all European sites from harmful development.

6.2.2 Enhancement of the green infrastructure network will provide alternatives for recreational visitors to greenspaces.

7 Appropriate Assessment of Policy 4 'Strategic Infrastructure'

7.1 Policy summary

7.1.1 Strategic infrastructure improvements will be undertaken to support timely delivery of the Greater Norwich Local Plan and the wider growth needs of the area. Key elements will be

- Transport, including improvements to buses, cycling and walking facilities, park and ride, rail services and Norwich airport. Road improvements promoted include the A140 Long Stratton bypass, and other enhancements of the major road network, delivery of the Norwich Western Link Road, and Highways England schemes on the A47.
- Energy supply network
- Waste water network to protect the integrity of designated habitats
- Healthcare infrastructure
- School capacity
- Green infrastructure network
- Services and facilities on development sites or developer contributions for off-site provision

7.2 Assessment of Policy 4 'Strategic Infrastructure'

7.2.1 Many of the transport improvements reduce the wider environmental impact compared to car use, and so might cause minor reductions in matters such as air pollution, although at a distance from European sites. The A140 Long Stratton bypass is around 3.5km from the nearest European site, and is at sufficient distance that there would be no impacts.

7.2.2 Norwich Western Link Road, which would join the A1270 to the A47, includes a viaduct crossing over the River Wensum SAC[56]. There is potential for the river crossing to cause harm to the SAC but it could also provide a Neutral impact depending on siting, design, and construction standards. The Norwich Western Link road is a Norfolk County Council project not controlled by or reliant on the GNLP, but GNLP needs to recognise progress of the scheme. Other road and rail improvements also are promoted and regulated by other bodies and are not controlled by or reliant on the Greater Norwich Local Plan.

7.2.3 **It is recommended that to reflect this an additional paragraph is added to section 5 of Policy 4.**

> ***Delivery of many of these transport improvements are outside the control of the Greater Norwich Local Plan. For example, the Norwich Western Link road and development of bus improvements are the responsibility of Norfolk County Council, and A140 and A47 improvements are the responsibility of Highways England. The GNLP Authorities will support the transport infrastructure improvements provided that their promoters and the relevant competent authority are able to demonstrate that they would not conflict with other policies of GNLP and where there would be no adverse affect on the integrity of a European site***

7.2.4 Improvements to waste water infrastructure, in particular at Whitlingham water recycling centre and the Yare Valley sewer, are intended to protect the integrity of designated habitats. The water cycle study will confirm or provide amendments to the needs. These improvements contribute to securing the mitigation for Policy 1 'The Growth Strategy' and therefore can be considered to be connected with or necessary for the management of European sites. However, failure to make

[56] https://www.norfolk.gov.uk/roads-and-transport/major-projects-and-improvement-plans/norwich/norwich-western-link/about-the-norwich-western-link accessed on 5th November 2019

these improvements in advance of development coming forward may make large elements of the Local Plan undeliverable in the short term (see assessment of Policy 1).

7.2.5 There are no pathways which might have an adverse affect on European sites, for energy infrastructure improvements (electricity substations), school capacity or healthcare infrastructure, as no sites are allocated for these facilities on or near any European site. There would similarly be no impact pathways for on-site or off-site local services.

7.2.6 It is ascertained that this policy will have no adverse affect upon the integrity of any European site subject to the completion of the water cycle study regarding improvements to Water Recycling Centres.

8 Appropriate Assessment of Policy 5 'Homes'

8.1 Policy summary

8.1.1 Policy 5 provides the detail required to implement the general requirements for housing set in policy 1 and in NPPF, particularly in relation to providing a varied residential offer in terms of tenure and cost. It also includes updates to existing local plan policies where circumstances have changed since adoption, such as for minimum space standards and adaptable homes. It includes detailed policy on

- The proportion of affordable housing and design of affordable housing
- Space standards
- Older people's housing
- Gypsies and Travellers, Travelling Show People and Residential Caravans
- Purpose-built student accommodation
- Custom-build plots

8.2 Assessment of Policy 5 'Homes'

8.2.1 The policy generally adds detail to the type and character of housing growth to be provided under Policy 1, but adds no additional housing growth and does not alter the impact pathways to any European site compared to the growth strategy in policy 1. There are no allocations for sites for the three development types mentioned (Gypsies, Travellers, Travelling Show People or Residential Caravans, student accommodation, custom-build plots). Development of these types of home is subject to the protection provided by Policy 3 as with all other developments, demonstrating that these developments could not harm any European site. Policy 3 ensures that housing development will pay a tariff to fund mitigation measures to protect Habitats Regulation Assessment designated sites from additional recreational impact.

8.2.2 There are no pathways which could have an adverse affect upon any European site. It is ascertained that this policy will have no adverse affect upon the integrity of any European site subject to the completion of the studies listed in the assessment of Policy 1.

9 Appropriate Assessment of Policy 6 'The Economy'

9.1 Policy summary

9.1.1 Policy 6 aims to deliver inclusive economic growth. It supports and delivers the ambitions of the New Anglia LEP's Norfolk and Suffolk Economic Strategy, the Cambridge Norwich Tech Corridor initiative and the enhanced growth outlined in the Greater Norwich City Deal.

9.1.2 Sufficient employment land is allocated in accessible locations to meet identified need and provide for choice. The needs of small, medium and start-up businesses are addressed through the allocation and retention of smaller scale employment sites, encouraging the provision of small-scale business opportunities in all significant residential and commercial developments, and encouraging flexible design and innovative approaches.

9.1.3 Larger scale needs are addressed through the allocation of sufficient land to provide a choice and range of sites, including key strategic sites targeted at specific sectors. Tourism, leisure, environmental and cultural industries will be promoted. There will be provision for vocational, further and higher education provision.

9.1.4 The development of new retailing, services, offices and other town centre uses will be encouraged at a scale appropriate to the hierarchy of defined centres ranging from Norwich city centre to towns, large villages and local centres of major growth locations.

9.1.5 Strategic employment areas are

- The City centre
- The airport area, and in particular a new site on the northern edge of the airport accessed directly from the Broadland Northway and a site at the A140/Broadland Northway junction and focussed on uses benefiting from an airport location
- Browick Interchange, Wymondham
- Longwater
- Rackheath
- The business parks at Thorpe St Andrew – Broadland Business Park, St Andrews Business Park and Broadland Gate
- Norwich Research Park including the Norfolk and Norwich University Hospital and the University of East Anglia
- Hethel
- The Food Enterprise Park at Honingham/Easton

9.1.6 The development of new retail, leisure, offices and other town centre uses will be encouraged at a scale appropriate to a hierarchy of defined centres.

9.2 Assessment of Policy 6 'The economy'

Employment facilities, town and village centres, and education provision

9.2.1 The nearest strategic employment areas to European sites are Longwater (1km from River Wensum SAC and separated from it by River Tud), Rackheath (around 2.8km from Broads / Broadland European sites) and Hethel (around 3km from Norfolk Valley Fens SAC). The road access for these three sites are to nearby A roads over 200m from European sites, which provide access to Norwich and the wider road network with no new road required in the vicinity of any European site.

9.2.2 There is no specific allocation for a proposed employment facility that might have environmental impacts over such a large area that might affect a European site at distance, for example emitting large amounts of air pollution or requiring a new water abstraction. If such a development is

subsequently proposed, Policy 3 would provide a safeguard and that development would be required to undergo its own Habitats Regulations Assessment.

9.2.3 **Employment development at Reepham and Foulsham which would rely on its waste water being treated at Reepham WRC and Foulsham WRC respectively would result in an adverse affect upon the integrity of River Wensum SAC and the Broads European site. Development in Norwich which would rely on its waste water being treated at Whitlingham Trowse WRC might result in an adverse affect upon the integrity of River Wensum SAC and the Broads European site. Mitigation works at the WRCs is outside the control of the Greater Norwich Local Plan and its constituent Councils.**

9.2.4 Allocations which would use those WRCs to treat waste water cannot at this time be delivered. The allocations may be made, but delivery would be restricted until water quality issues are resolved. This could be by improved analysis and assessment in the forthcoming Water Cycle Study or a phasing delay until sewage works are upgraded. Other ways to ensure that additional pollutants such as phosphate do not enter European sites could include converting land from arable use to semi-natural habitats thus reducing the run-off from that land. Careful calculation may be needed to ensure nutrient neutrality. There would be compatibility with Biodiversity Net Gain (Policy 3) if off-site habitat creation is needed; the habitat creation for BNG if sited carefully will also reduce nutrient input to rivers. **Completion of the Water Cycle Study is necessary to be clearer about any impacts on European sites.**

9.2.5 There are no new allocations for education provision in this policy, although it is expected that new facilities might be extensions of existing facilities or provided in areas of housing growth away from any European sites.

Tourism development

9.2.6 There are no new allocations for tourism development in this policy. However, even small-scale windfall tourism developments might result in impacts upon European sites. A hypothetical example might be accommodation close to a European site where the main recreational opportunity might be to that European site, causing harm by vegetation trampling or disturbance to birds. Larger-scale tourism accommodation further from a European site but within easy driving distance to a European site might also provide an increase in visitor pressure. Tourists might have a larger impact than permanent residents, as each new group tourists might explore the European sites whereas some permanent residents might explore once and rarely return. It is recommended that planning applications for tourism accommodation within 1km of a European site, should be subject to HRA. Tourism providing 50 or more 'homes' calculated on a ratio of 6 bed-spaces per home (as per the GIRAMS report) would need to provide similar greenspace as residential development for 50+ homes. It is also possible that a tourism development without accommodation might result in impact to a European site, for example an equestrian business setting up to provide horse-riding on a European site where a significant increase in trampling or disturbance may occur.

9.2.7 The in-combination of tourism accommodation is mitigated for by the GIRAMS which recommends that tourism accommodation is included in the Strategy with tariff contributions on the basis that 6 bed spaces is the equivalent of one home, for campsites, hotels and caravan parks including extensions.

9.2.8 Although there are safeguards in Policy 3 for accommodation, developers of small-scale tourism schemes in particular might not be aware of the implications**. To provide clarity, it is recommended that extra clarification is added to Policy 6 perhaps as supporting text '*Habitats Regulations Assessments will be required for small scale tourism accommodation within 1km of European sites. Tourism accommodation will be treated as residential development on the basis of 6 bed spaces being equivalent to one home, with respect to policy for developments of 50 or more homes and for the GIRAMS tariff payment. Habitats Regulations Assessment will also be required for tourism, leisure, cultural and environmental activities which would result in greater use of European sites*'.**

Conclusions of the assessment

9.2.9 There are no pathways which could have an adverse effect upon any European site, for employment facilities such as employment facilities, town and village centres, and education provision. However, recommendations are made above in respect of tourism development which are necessary to demonstrate that tourism development will not have an adverse affect upon the integrity of any European site.

10 Appropriate Assessment of Policy 7 'Strategy for the areas of growth'

10.1 Policy summary

10.1.1 Policies 7.1 to 7.5 provide details of the distribution of growth set out in policy 1, along with location-specific strategic policies for the different areas of growth within Greater Norwich. The policies for these areas broadly follow the settlement hierarchy:

- 7.1 The Norwich urban area including the fringe parishes;
- 7.2 The Main towns;
- 7.3 The Key service centres;
- 7.4 Village clusters;
- 7.5 Small-scale windfall development of up to three dwellings per parish.

10.1.2 The Site Proposals document provides individual allocations to implement the strategy.

10.1.3 Policy 7.6 will result in the identification of a new settlement, to be brought forward into the next Local Plan. The policy does not allocate land or make any commitments to developing any particular site.

10.1.4 Assessment of these policies includes assessment of the individual settlement policies in the 'The Sites' part of the Local Plan. Maps and site allocation polices are considered here.

10.2 Assessment of Policy 7.1 'The Norwich urban area including the fringe parishes'

10.2.1 All sites in Policy 7.1 are at sufficient distance from any European site that there would be no direct impacts such as construction impacts or residents walking directly to European sites. The assessment of Policy 1 'The Growth Strategy' remains valid for Policy 7.1 with no amendments needed.

10.2.2 The scale of housing growth means that there is likely to be a significant effect of each residential development in combination with other residential developments in the plan area, with regards to recreational impacts on European sites. All developments will be required to pay the GIRAMS tariff so that suitable mitigation can be carried out. Greenspace requirements according to Natural England's advice will also be required in accordance with assessment of Policy 1.

10.2.3 It is understood that all of Norwich's sewage goes to Whitlingham Trowse Water Recycling Centre for treatment and release into the River Yare where it then flows into the Broads European sites. **High discharge of pollutants at Whitlingham Trowse Water Recycling Centre means that it is uncertain if any development would be able to avoid adding further ammonia, BOD or phosphate into European sites. This is a significant issue and may make the policy undeliverable**. See assessment of policy 1 for more information.

10.3 Assessment of Policy 7.2 'The Main Towns'

10.3.1 All sites in Policy 7.2 are at sufficient distance from any European site that there would be no direct impacts such as construction impacts or residents walking directly to European sites. The assessment of Policy 1 'The Growth Strategy' remains valid for Policy 7.2 with no amendments needed.

10.3.2 The scale of housing growth means that there is likely to be a significant effect of each residential development in combination with other residential developments in the plan area, with regards to recreational impacts on European sites. All developments will be required to pay the GIRAMS tariff so that suitable mitigation can be carried out. Greenspace requirements according to Natural England's advice will also be required in accordance with assessment of Policy 1.

10.4 Assessment of Policy 7.3 'The Key service centres'

10.4.1 Growth in some key service centres includes growth in locations in the vicinity of European sites, which could potentially have an impact on The Broads / Broadland European sites dependent upon the exact location of the allocation, the sensitivities of and access to the European site in that vicinity and the availability of alternative recreation facilities. These are further assessed below. Other Key Service Centres are also included in the table below, and are discussed in relation to European sites even if there are no new allocations.

Key Service Centre	Existing deliverable commitment (including uplift + delivery 2018/19)	New allocations	Total deliverable housing commitment 2018 - 2038	Assessment
Acle	200	340	540	The 170 homes which were previously allocated and have been carried forward into this plan have been deemed to have no likely significant effect either through the plan making process, planning application process or both. The nearest footpath access from the allocation to the European site is in the east of the village along Damgate Lane to where the Weavers Way runs southwards across Damgate Marshes SSSI, a component of the European sites. Another access to the European site is across a railway pedestrian level crossing east of Acle. These accesses are over 1km from the nearest point of the new allocation of 340 houses (GNLP0378R/GNLP2139R, indicating that few regular dog walkers would access the European site on foot. The special interest of this part of this European site is the aquatic flora and fauna of the dykes[57] which is not vulnerable to footpath use. There is unlikely to be any harm caused by the allocation/s acting alone. The GIRAMS tariff will provide mitigation for in-combination effects.
Blofield	301	15	316	The existing commitment is formed of 138 dwellings with planning permission, one carried-forward allocation of 163 homes and a new allocation of 15 homes. The homes which form the existing commitment in Blofield has been deemed to have no likely significant effect either through

[57] https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1006348.pdf

Key Service Centre	Existing deliverable commitment (including uplift + delivery 2018/19)	New allocations	Total deliverable housing commitment 2018 - 2038	Assessment
				the plan making process, planning application process or both. The Broads/Broadland European site is over 1km distant from the allocated sites, with poor public access to the European site by foot, except at existing hotspots at Brundall Marina. The poor public access indicates that there would be no direct recreational impact from walkers. The GIRAMS tariff will provide mitigation for in-combination effects.
Brundall	175	0	175	The existing commitment is formed of development sites with permission which have not yet been built. There are no new allocations. The 175 homes which form the existing commitment in Brundall has been deemed to have no likely significant effect through the planning application process. The GIRAMS tariff will provide mitigation for in-combination effects
Hethersett	1375	0	1375	The existing commitment is formed of development sites with planning permission which have not yet been built, or the remaining unbuilt elements of sites already under construction. The homes which form the existing commitment in Hethersett has been deemed to have no likely significant effect either through the plan making process, planning application process or both, with no new allocations. Hethersett is sufficiently far from any European site that there would be no direct recreational impact. The GIRAMS tariff will provide mitigation for in-combination effects.
Hingham	20	100	120	The existing commitment is formed of development sites with planning permission which have not yet been built, or the remaining unbuilt elements of sites already under construction. The 20 homes which form the existing commitment in Hingham has been deemed to have no

Key Service Centre	Existing deliverable commitment (including uplift + delivery 2018/19)	New allocations	Total deliverable housing commitment 2018 - 2038	Assessment
				likely significant effect either through the plan making process, planning application process or both, with no new allocations. Hingham is sufficiently far from any European site that there would be no direct recreational impact. The GIRAMS tariff will provide mitigation for in-combination effects.
Loddon / Chedgrave	206	240	446	The existing commitment is formed of development sites for 206 homes with planning permission which have not yet been built. The 206 homes which form the existing commitment in Loddon / Chedgrave has been deemed to have no likely significant effect either through the plan making process, planning application process or both. Allocation GNLP0312 (180 dwellings) is 950m in a straight line distance but is a 2.8km walk to the nearest part of the Broads / Broadland European site. Allocation GNLP0463R (20 dwellings) is around 1.2km from the European site in a straight line distance and 1.5km walking distance indicating that few regular dog walkers would access the European site on foot. Access to the European site is in the east of the village where the Wherryman's Way runs eastwards across Hardley Flood SSSI, a component of the European sites. A path along the north side of River Chet also leads to this SSSI. The special interest of this part of this European site is bird use all year round, which are vulnerable to footpath use[58]. There is unlikely to be any harm caused by the allocations alone from people walking to the European site. The GIRAMS tariff will provide mitigation for in-combination effects.

[58] https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1000432.pdf

Key Service Centre	Existing deliverable commitment (including uplift + delivery 2018/19)	New allocations	Total deliverable housing commitment 2018 - 2038	Assessment
Poringland, Framingham Earl and Framingham Pigot	547	0	547	The existing commitment is formed of development sites with planning permission and has been deemed to have no likely significant effect either through the plan making process, planning application process or both, with no new allocations. Poringland is sufficiently far from any European site that there would be no direct recreational impact. The GIRAMS tariff will provide mitigation for in-combination effects.
Reepham	155	0	155	The existing commitment is formed of development sites for 120 homes in a previous allocation which have not yet been built, and 35 additional homes with planning permission. The northern of the two existing allocations (Rep 1 in the existing site allocations local plan) is 0.9km from Booton Common (part of Norfolk Valley Fens SAC) but further in walking distance, including a length of narrow country road with no pavement thus deterring walkers. The Marriot Way is adjacent to the northern allocation thus providing a walking opportunity for residents. The southern of the two existing allocations (Rep 2 in the existing site allocations local plan) is just over 1km in a straight line distance, and around 1.5km in actual walking distance from Booton Common, again requiring the use of a narrow country road with no pavement. There is unlikely to be any harm caused by the allocations from people walking to the European site. The GIRAMS tariff will provide mitigation for in-combination recreational effects. **This residential allocation and leisure / employment allocations may be undeliverable until the Water Cycle Study is finalised perhaps requiring improvements**

Key Service Centre	Existing deliverable commitment (including uplift + delivery 2018/19)	New allocations	Total deliverable housing commitment 2018 - 2038	Assessment
				are made to Reepham Water Recycling Centre
Wroxham	5	0	5	The existing commitment cis formed of 5 dwellings with planning permission, and no new allocations. The 5 homes which form the existing commitment in Wroxham has been deemed to have no likely significant effect through the planning application process or both. The small number of new homes in a busy village is *de minimis* in terms of direct impact. The GIRAMS tariff will provide mitigation for in-combination effects.

10.4.2 Windfall sites will be limited to locations within settlement boundaries. It is possible that planning applications might come forward within 1km of a European site. In this case, the safeguard of Policy 3 would prevent harm.

10.4.3 No new employment allocations are made.

10.4.4 It is concluded that these allocations would not adversely affect the integrity of any European site through direct effects of recreational disturbance from people leaving the sites on foot or other immediate proximity effects. Wider recreational impacts of people driving to European sites are included in the assessment of Policy 1.

10.5 Assessment of Policy 7.4 'Village Clusters'

10.5.1 Growth in Village Clusters includes growth in locations in the vicinity of European sites or further afield, through allocations or policy for minimum of 15 dwellings in various villages or clusters of villages sharing a primary school catchment. This growth could potentially have an impact on The Broads / Broadland European sites or Norfolk Valley Fens dependent upon the exact location of the allocation, the sensitivities of and access to the European site in that vicinity and the availability of alternative recreation facilities.

10.5.2 Village Clusters in South Norfolk District will be allocated through a separate South Norfolk Village Clusters Local Plan document. The in-combination effects of the allocations in South Norfolk Village clusters will be mitigated for by the GIRAMS tariff payments. The sites in Broadland are made up of existing sites with planning permission and allocated sites set out in the GNLP site document and Neighbourhood Plans

Village	Existing deliverable commitment (including uplift + delivery 2018/19)	New allocations	Total deliverable housing commitment 2018 – 2038	Assessment

Blofield Heath and Hemblington	75	20	20	There is a carried forward allocation for 36 homes and 39 additional homes with planning permission. Both allocations are over 2km in a straight line distance and there is unlikely to be any harm caused by the allocations from people walking to the Broads / Broadland European site. The GIRAMS tariff will provide mitigation for in-combination effects.
Buxton with Lamas and Brampton	27	40	67	There is a carried forward allocation for 20 homes and 7 additional homes with planning permission. The allocations are over 4km in a straight line distance from Norfolk Valley Fens SAC (Buxton Heath SSSI) and there is unlikely to be any harm caused by the allocations from people walking to the European site. The GIRAMS tariff will provide mitigation for in-combination effects.
Cawston, Brandiston and Swannington	40	40	80	There is a carried forward allocation for 20 homes and 20 additional homes with planning permission. The allocations are over 3km in a straight line distance from Norfolk Valley Fens SAC (Buxton Heath SSSI) and there is unlikely to be any harm caused by the allocations from people walking to the European site. The GIRAMS tariff will provide mitigation for in-combination effects.
Coltishall, Horstead with Stanninghall and Belaugh	64	20	84	There is a carried forward allocation for 55 homes and 9 additional homes with planning permission. The allocations are over 3km in a straight line distance from Broads / Broadland European site (Crostwick Marsh SSSI) and there is unlikely to be any harm caused by the allocations from people walking to the European site. The GIRAMS tariff will provide mitigation for in-combination effects.
Foulsham and Themelthorpe	13	15	28	There are no carried-forward residential allocations and 13

				homes with planning permission. The allocation is around 2.5km in a straight line distance from River Wensum SAC and there is unlikely to be any harm caused by the allocations from people walking to the European site. The GIRAMS tariff will provide mitigation for in-combination effects. **This residential allocation and an employment allocation may be undeliverable until the Water Cycle Study is finalised perhaps requiring improvements are made to Foulsham Water Recycling Centre.**
Freethorpe, Halvergate and Wickhampton	21	40	61	There is a carried forward allocation for 10 homes and 11 additional homes with planning permission. The allocations are over 1km in a straight line distance and longer walking distance from Broads / Broadland European site (Halvergate Marshes SSSI) and there is unlikely to be any harm caused by the allocations from people walking to the European site. The GIRAMS tariff will provide mitigation for in-combination effects. **This residential allocations may be undeliverable until the Water Cycle Study is finalised perhaps requiring improvements are made to Freethorpe Recycling Centre**
Great Witchingham, Lenwade, Weston Longueville, Alderford, Attlebridge, Little Witchingham and Moreton-on-the-Hill.	30	20	50	There are no carried forward allocation and 30 homes with planning permission. The allocation is around 130m in a straight line distance from River Wensum SAC but with no footpath access to the river there or in the vicinity and there is unlikely to be any harm caused by the allocations from people walking to the European site. The GIRAMS tariff will provide mitigation for in-combination effects.

Horsford	398	45	443	Horsford is a significant distance from any European sites with no straightforward PRoW access. The GIRAMS tariff will provide mitigation for in-combination effects.
Horsham and Newton St Faith	66	50	116	Horsham is a significant distance from any European sites with no straightforward PRoW access. The GIRAMS tariff will provide mitigation for in-combination effects.
Lingwood and Burlingham	77	60	137	There are no carried forward allocation and 30 homes with planning permission. Allocations are well over 2.5km in a straight line distance and significantly further as walking distance from Broads / Broadland European site (Yare Broads and Marshes SSSI) and there is unlikely to be any harm caused by the allocations from people walking to the European site. The GIRAMS tariff will provide mitigation for in-combination effects.
Marsham	14	35	49	There are no carried forward allocation and 14 homes with planning permission. The allocation is over 2km in a straight line distance from Norfolk Valley Fens SAC (Buxton Heath SSSI) and there is unlikely to be any harm caused by the allocations from people walking to the European site. The GIRAMS tariff will provide mitigation for in-combination effects.
Reedham	27	60	87	Allocation GNLP1001 is around 1.8km in a straight line distance and GNLP 3003 is further distant still from Broads / Broadland European site (Limpenhoe Marsh SSSI). Allocation GNLP3003 is 900m from the Broads / Broadland European site in a straight line but over 2km walking distance along the River Yare, with allocation GNLP1001 being more distant in this direction. There is unlikely to be any harm caused by the

				allocations from people walking to the European site. The GIRAMS tariff will provide mitigation for in-combination effects.
Salhouse	14	12	26	There are no carried forward allocation and 14 homes with planning permission. The allocation is around 2km in a straight line distance and considerably further walking distance from Broads / Broadland European site (Bure Broads and Marshes SSSI) and there is unlikely to be any harm caused by the allocations from people walking to the European site. The GIRAMS tariff will provide mitigation for in-combination effects.
South Walsham	25	25	50	There is a carried forward allocation for 20 homes and 5 additional homes with planning permission. The allocations are around 2.3km in a straight line distance and considerably further walking distance from Broads / Broadland European site (Bure Broads and Marshes SSSI) and there is unlikely to be any harm caused by the allocations from people walking to the European site. The GIRAMS tariff will provide mitigation for in-combination effects.

10.5.3 Windfall sites will be limited to locations within or well related to settlement boundaries for a minimum of 15 dwellings or, for affordable housing schemes, up to a maximum of 15 dwellings. This part of the policy could potentially impact on European sites. For example, some villages are close to the Broads / Broadland European site and it is possible that planning applications might come forward within 1km of a European site. In this case, the safeguard of Policy 3 would prevent harm.

10.5.4 No new employment allocations are made.

10.6 Assessment of Policy 7.5 'Small Scale Windfall Housing Development'

10.6.1 Policy 7.5 promotes small scale housing development, including self/custom build in all parishes. Its purpose is to allow for up to three additional dwellings on only one site in each parish beyond those allocated or allowed for as larger scale windfall sites through policies 1 and 7.2 to 7.4. The policy limits the number of homes to prevent over development in rural areas.

10.6.2 The policy also states that proposals would have no detrimental impact on natural environment, so that the safeguard of European sites by Policy 3 remains in place. For example, proposals

within 1km of European sites would need to be assessed and would be refused if there was to be harm to any European site.

10.6.3 It is concluded that these allocations would not adversely affect the integrity of any European site through direct effects of recreational disturbance from people leaving the sites on foot or other immediate proximity effects. Wider recreational impacts of people driving to European sites are included in the assessment of Policy 1.

10.7 Assessment of GNLP0581/2043 Costessey contingency site

10.7.1 The contingency allocation of 800 homes will become an allocation only if certain circumstances are met relating to undeliverability of other allocations. The allocations are around 1.6km in a straight line distance and considerably further walking distance from River Wensum SAC and there is unlikely to be any harm caused by the allocations from people walking to the European site. The GIRAMS tariff will provide mitigation for in-combination effects. **The site might well be reliant on the Whitlingham Trowse Water Recycling Centre being upgraded before it is deliverable**.

11 Conclusions

11.1 The Greater Norwich Local Plan acting alone

11.1.1 It is ascertained that the Greater Norwich Local Plan regulation 19 Submission Draft v1.6 would have no adverse affect upon the integrity of any European site acting alone, subject to the following outstanding matters

- Adoption of the Green Infrastructure and Recreational Impact Avoidance Mitigation Strategy to achieve mitigation for in-combination recreational effects
- The provision of suitable green space for developments over 50 homes
- Resolution of issues with Water Recycling Centres
- Clarification of Policy 6, section 5 with regard to tourism accommodation and development which would utilise a European site.

11.1.2 In particular, the resolution of issues with Water Recycling Centres to make their discharges sufficiently low in pollutants to avoid harm to European sites may take a long time to achieve and development may not be permissible until those resolutions are in place.

11.2 The Greater Norwich Local Plan in combination with other plans or projects

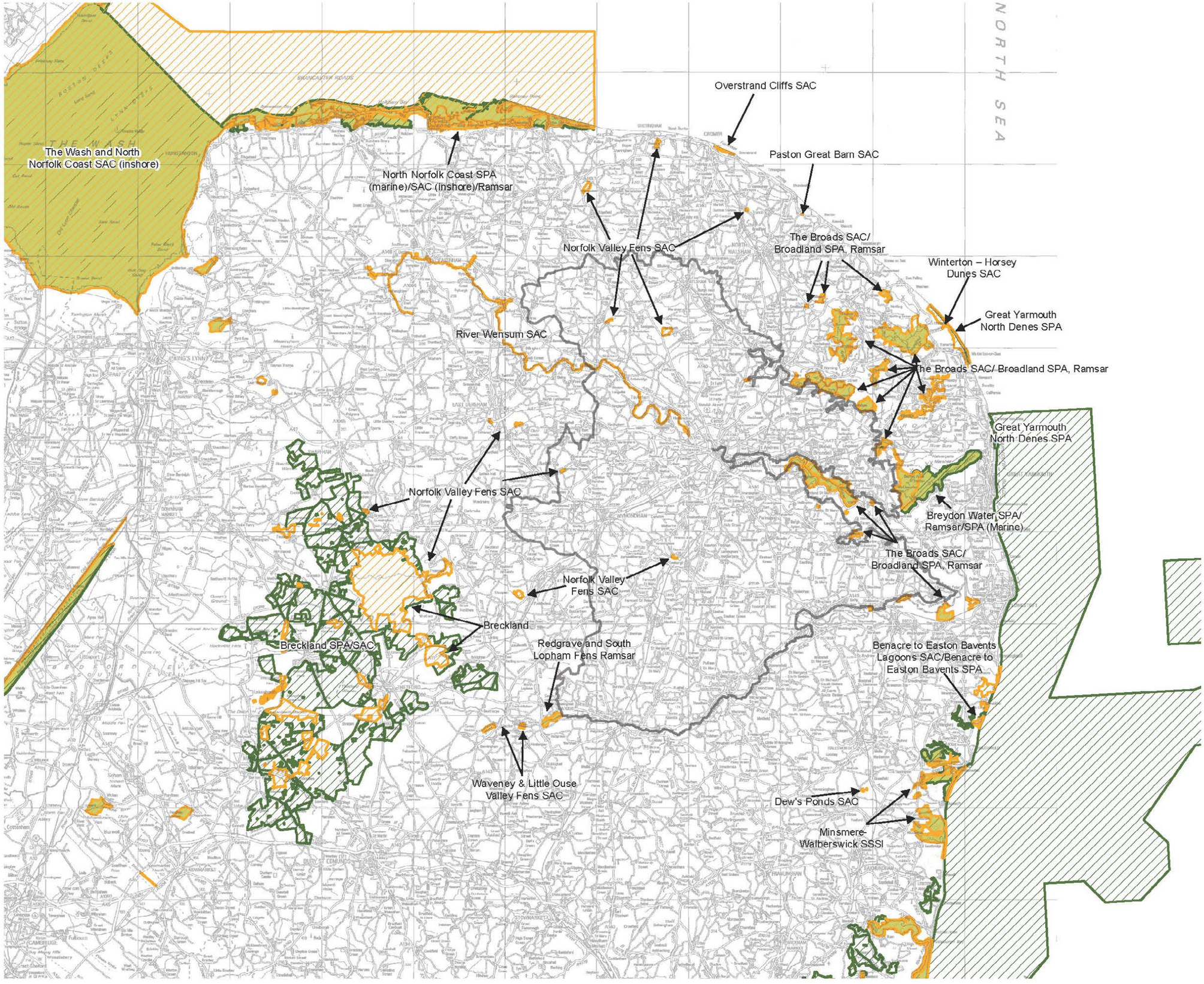
11.2.1 Other Local Planning Authorities throughout Norfolk are progressing towards adopting the GIRAMS scheme to mitigate for impacts on European site. This scheme will act to ensure that in-combination effects of residential development would not have an adverse impact on the integrity of any European site.

11.2.2 It is recommended that Policy 4 'Strategic Infrastructure' is amended to explain that road schemes are not promoted, nor rely on the Local Plan, and are assessed separately.

11.3 Overall conclusion

11.3.1 It is concluded that **subject to satisfactory resolution of the outstanding matters listed above,** there would be no adverse affect upon the integrity of any European site.

Figures



Key

- Greater Norwich Boundary
- Special Areas of Conservation
- Special Protection Areas
- RAMSAR

E16845 Greater Norwich Local Plan

European site locations

Figure 01

Scale 1:400,000 @ A3

August 2017

thelandscapepartnership

Appendix 1

European sites

River Wensum SAC		
Site description summary	**Qualifying features**[59]	
A calcareous lowland river considered one of the best areas in the UK for Ranunculion fluitantis and Callitricho-Batrachion vegetation. Also significant for the presence of Brook Lamprey, Bullhead and Desmoulin's whorl snail. One of the best areas in the UK for the native White-clawed Crayfish. At the upper reaches, run-off from calcareous soils rich in plant nutrients feeds beds of submerged and emerged vegetation characteristic of chalk streams. Lower, the chalk is overlain by boulder clay, resulting in aquatic plant communities more characteristic of rivers with mixed substrates.	3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation
	7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae
	91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)
	1092	Austropotamoblus pallipes (White-clawed (or Atlantic steam) Crayfish)
	1163	Cottus gobio (Bullhead)
	1096	Lampetra planeri (Brook Lamprey)
	1016	Vertigo moulinsiana (Desmoulin's whorl snail)
Component SSSI/s[60]		
River Wensum SSSI	Covers 385.96ha and contains 55 units. 11.05% of area in Favourable condition, 47.70% of area in Unfavourable-Recovering condition, 41.25% of area in Unfavourable-No change condition.	
Conservation Objectives[61]		
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, and, • The distribution of qualifying species within the site.	

Norfolk Valley Fens SAC		
Site description summary	**Qualifying features**[62]	
A series of valley-head spring-fed fens, typified by black-bog-rush - blunt-flowered	4010	North Atlantic wet heaths with Erica tetralix

[59] Taken from the Natura 2000 Standard data form for site UK0012647 River Wensum SAC dated 25-01-16.
[60] Condition status taken from Natural England data on 3 December 2019.
[61] Taken from Natural England's European Site Conservation Objectives for River Wensum SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.
[62] Taken from the Natura 2000 Standard data form for site UK0012892 Norfolk Valley Fens SAC dated 25-01-16.

rush *Schoenus nigricans - Juncus subnodulosus* mire. There are also transitions to reedswamp, other fen and wet grassland types, and gradations from calcareous fens into acidic flush communities. Plant species present include marsh helleborine *Epipactis palustris*, narrow-leaved marsh-orchid *Dactylorhiza traunsteineri*, and alder *Alnus glutinosa* which forms carr woodland in places by streams. Marginal fens associated with pingos-pools originating from the thawing of large blocks of ice at the end of the last Ice Age support several large populations of Desmoulin's whorl snail *Vertigo moulinsiana*.	4030	European dry heaths
	6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (*important orchid sites)
	6410	Molinia meadows on calcareous, peaty, or clayey-silt-laden soils (Molinion caeruleae)
	7150	Depressions on peat substrates of the Rhynchosporion
	7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae
	7230	Alkaline fens
	91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)
	1355	Lutra Lutra (Eurasian Otter)
	1166	Triturus cristatus (Great Crested Newt)
	1014	Vertigo angustior (Narrow-mouthed whorl snail)
	1016	Vertigo moulinsiana (Desmoulin's whorl snail)
Component SSSI/s[63]		
Badley Moor SSSI	Covers 18.33ha and contains 4 units. 100% of area in Favourable condition	
Booton Common SSSI	Covers 8.19ha and contains 1 unit. 100% of area in Unfavourable-Recovering condition.	
Buxton Heath SSSI	Covers 67.32ha and contains 1 unit. 100% of area in Unfavourable-Recovering condition.	
Coston Fen, Runhall SSSI	Covers 7.11ha and contains 1 unit. 100% of area in Unfavourable-No change condition.	
East Walton and Adcock's Common SSSI	Covers 62.41ha and contains 3 units. 100% of area in Unfavourable-Recovering condition.	
Flordon Common SSSI	Covers 9.91ha and contains 2 units. 19.57% of area in Favourable condition, 80.43% of area in Unfavourable-Recovering condition.	
Foulden Common SSSI	Covers 139ha and contains 7 units. 24.74% of area in Favourable condition, 61.51% of area in Unfavourable-Recovering condition, 13.75% of area in Unfavourable-Declining condition.	
Great Cressingham Fen SSSI	Covers 14.33ha and contains 1 unit. 100% of area in Unfavourable-Recovering condition.	
Holt Lowes SSSI	Covers 49.91ha and contains 2 units. 30.07% of area in Favourable condition, 69.93% of area in Unfavourable-Recovering condition.	

[63] Condition status taken from Natural England data on 3rd December 2019.

Potter & Scarning Fens, East Dereham SSSI	Covers 6.20ha and contains 2 units. 100% of area in Unfavourable-Recovering condition.
Sheringham and Beeston Regis Commons SSSI	Covers 24.94ha and contains 2 units. 100% of area in Unfavourable-Recovering condition.
Southrepps Common SSSI	Covers 5.57ha and contains 1 unit. 100% of area in Unfavourable-Recovering condition.
Swangey Fen, Attleborough SSSI	Covers 48.39ha and contains 6 units. 44.44% of area in Favourable condition, 55.56% of area in Unfavourable-Recovering condition.
Thompson Water, Carr and Common SSSI	Covers 154.74ha and contains 11 units. 73.05% of area in Favourable condition, 22.72% of area in Unfavourable-Recovering condition, 4.24% of area in Unfavourable-Declining condition.
Conservation Objectives[64]	
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, and, • The distribution of qualifying species within the site.

The Broads SAC/ Broadland SPA, Ramsar		
Site description summary	**SAC qualifying features**[65]	
A low-lying wetland complex connecting the Bure, Yare, Thurne, and Waveney River systems. Wetland habitats form a mosaic of open water, reedbeds, carr woodland, grazing marsh, and fen meadow, with an extensive network of medieval peat excavations. The Site boasts a rich array of flora and fauna. The SPA is designated for supporting a number of rare or vulnerable (Article 4.1) Annex I bird species during the breeding season. In addition, the SPA is designated for supporting regularly occurring migratory (Article 4.2) species during the breeding season and over winter.	3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.
	3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation
	6410	Molinia meadows on calcareous, peaty, or clayey-silt-laden soils (Molinion caeruleae)
	7140	Transition mires and quaking bogs
	7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae
	7230	Alkaline fens
	91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)

[64] Taken from Natural England's European Site Conservation Objectives for Norfolk Valley Fens SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.
[65] Taken from the Natura 2000 Standard data form for site UK0013577 The Broads SAC dated 25-01-16.

	4056	Anisus vorticulus (Little whorlpool ram's-horn snail)
	1903	Liparis loeselii (Fen Orchid)
	1355	Lutra Lutra (Eurasian Otter)
	1166	Triturus cristatus (Great Crested Newt)
	1016	Vertigo moulinsiana (Desmoulin's whorl snail)
	SPA qualifying features[66]	
	A056	Anas clypeata (Shoveler) (over winter)
	A050	Anas penelope (Wigeon) (over winter)
	A051	Anas strepera (Gadwall) (over winter)
	A021	Botaurus stellaris (Bittern) (breeding)
	A081	Circus aeruginosus (Marsh Harrier) (breeding)
	A082	Circus cyaneus (Hen Harrier) (over winter)
	A037	Cygnus columbianus bewickii (Bewick's Swan) (over winter)
	A038	Cygnus cygnus (Whooper Swan) (over winter)
	A151	Philomachus pugnax (Ruff) (over winter)
	Ramsar qualifying features[67]	
	H7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae Calcium-rich fen dominated by great fen sedge (saw sedge).
	H7230	Alkaline fens Calcium-rich springwater-fed fens.
	H91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) Alder woodland on floodplains, and the Annex II species
	S1016	Vertigo moulinsiana (Desmoulin`s whorl snail)
	S1355	Lutra lutra (Eurasian Otter)
	S1903	Liparis loeselii Fen Orchid
		Cygnus columbianus bewickii, NW Europe (Tundra (Bewick's) Swan)
		Anas penelope (Eurasian Wigeon)
		Anas strepera strepera (Gadwall)
		Anas clypeata (Shoveler)

[66] Taken from the Natura 2000 Standard data form for site UK9009253 Broadland SPA dated 25-01-16.
[67] Taken from the Ramsar Information Sheet for Broadland dated 21-09-94.

Component SSSI/s[68]	
Alderfen Broad SSSI	Covers 21.34ha and contains 3 units. 8.65% of area in Favourable condition, 91.35% of area in Unfavourable-Recovering condition.
Ant Broads and Marshes SSSI	Covers 745.27ha and contains 35 units. 54.39% of area in Favourable condition, 39.18% of area in Unfavourable-Recovering condition.
Barnby Broad & Marshes SSSI	Covers 192.69ha and contains 24 units. 59.93% of area in Favourable condition, 40.07% of area in Unfavourable-Recovering condition.
Broad Fen, Dilham SSSI	Covers 38.43ha and contains 1 unit. 100% of area in Unfavourable-Recovering condition.
Bure Broads and Marshes SSSI	Covers 741.15ha and contains 14 units. 43.08% in Favourable condition, 46.85% in Unfavourable-Recovering condition, 10.07% in Unfavourable-No change condition.
Burgh Common and Muckfleet Marshes SSSI	Covers 121.54ha and contains 9 units. 27.72% of area in Favourable condition, 68.76% of area in Unfavourable-Recovering condition, 3.52% of area in Unfavourable-No change condition.
Calthorpe Broad SSSI	Covers 43.54ha and contains 3 units. 97.68% of area in Favourable condition, 2.32% of area in Unfavourable-Recovering condition.
Cantley Marshes SSSI	Covers 272.11ha and contains 3 units. 100% of area in Favourable condition.
Crostwick Marsh SSSI	Covers 11.57ha and contains 1 unit. 100% of area in Unfavourable-No change condition.
Damgate Marshes, Acle SSSI	Covers 64.68ha and contains 10 units. 74.73% of area in Favourable condition, 25.27% of area in Unfavourable-Recovering condition.
Decoy Carr, Acle SSSI	Covers 56.01ha and contains 6 units. 70.21% of area in Favourable condition, 29.79% of area in Unfavourable-Recovering condition.
Ducan's Marsh, Claxton SSSI	Covers 3.58ha and contains 2 units. 100% of area in Unfavourable-Recovering condition.
Geldeston Meadows SSSI	Covers 13.98ha and contains 2 units. 97.18% of area in Unfavourable-No change condition, 2.82% of area in Unfavourable-Declining condition.
Hall Farm Fen, Hemsby SSSI	Covers 9.15ha and contains 1 unit. 100% of area in Favourable condition.
Halvergate Marshes SSSI	Covers 1432.72ha and contains 42 units. 72.75% of area in Favourable condition, 23.71% of area in Unfavourable-Declining condition, 3.54% of area in Unfavourable-No change condition.
Hardley Flood SSSI	Covers 49.79ha and contains 2 units. 100% of area in Favourable condition.
Limpenhoe Meadows SSSI	Covers 11.95ha and contains 1 unit. 100% of unit in Unfavourable-Recovering condition.

[68] Condition status taken from Natural England data on 17th June 2019.

Ludham – Potter Heigham Marshes SSSI	Covers 101.51ha and contains 6 units. 100% of area in Favourable condition.
Poplar Farm Meadows, Langley SSSI	Covers 7.55ha and contains 1 unit. 100% of area in Favourable condition.
Priory Meadows, Hickling SSSI	Covers 23.94ha and contains 2 units. 29.79% of area in Favourable condition, 70.21% of area in Unfavourable-Recovering condition.
Shallam Dyke Marshes, Thurne SSSI	Covers 69.80ha and contains 8 units. 4.44% of area in Favourable condition, 95.56% of area in Unfavourable-No change condition.
Smallburgh Fen SSSI	Covers 7.63ha and contains 1 unit. 100% of area in Favourable condition.
Sprat's Water and Marshes, Carlton Colville SSSI	Covers 57.14ha and contains 11 units. 80.48% of area in Favourable condition, 19.19% of area in Unfavourable-Recovering condition, 0.33% of area in Unfavourable-No change condition.
Stanley and Alder Carrs, Aldeby SSSI	Covers 42.68ha and contains 3 units. 100% of area in Unfavourable-Recovering condition.
Trinity Broads SSSI	Covers 316.83ha and contains 23 units. 45.48% of area in Favourable condition, 41.98% of area in Unfavourable-Recovering condition, 12.54% of area in Unfavourable-No change condition.
Upper Thurne Broads and Marshes SSSI	Covers 1185.93ha and contains 19 units. 63.97% of area in Favourable condition, 16.65% of area in Unfavourable-Recovering condition, 4.82% of area in Unfavourable-No change condition, 14.57% of area in Unfavourable-Declining condition.
Upton Broad & Marshes SSSI	Covers 195.44ha and contains 18 units. 7.43% of area in Favourable condition, 91.84% of Unfavourable-Recovering condition, 0.72% of area in Unfavourable-No change condition.
Yare Broads and Marshes SSSI	Covers 744.46ha and contains 28 units. 39.22% of area in Favourable condition, 11.30% of area in Unfavourable-Recovering condition, 47.27% of area in Unfavourable-No change condition, 2.20% of area in Unfavourable-Declining condition.
SAC Conservation Objectives[69]	
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, and, • The distribution of qualifying species within the site.

[69] Taken from Natural England's European Site Conservation Objectives for The Broads SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.

SPA Conservation Objectives[70]	
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;	• The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.

Breydon Water SPA/Ramsar/SPA (Marine)		
Site description summary	**SPA qualifying features**[71]	
An inland tidal estuary at the mouth of the River Yare and its confluence with the Rivers Bure and Waveney. Extensive areas of mud-flats form the only tidal flats on the east Norfolk coast. The Site also features much floodplain grassland, which lies adjacent to the intertidal areas. It is internationally important for wintering waterbirds, some of which feed in the Broadland Ramsar that adjoins this site at Halvergate Marshes. This SPA is part of the Breydon Water European Marine Site.	A037	Cygnus columbianus bewickii (Bewick's (Tundra) Swan) (over winter)
	A151	Philomachus pugnax (Ruff) (concentration)
	A140	Pluvialis apricaria (Golden Plover) (over winter)
	A132	Recurvirostra avosetta (Avocet) (over winter)
	A193	Sterna hirundo (Common Tern) (breeding)
	A142	Vanellus vanellus (Northern Lapwing) (over winter)
		Waterbird assemblage
	Ramsar qualifying features[72]	
	Internationally important waterfowl assemblage (greater than 20000 birds)	
	Over winter the site regularly supports internationally important numbers of: Bewick's Swan Cygnus columbianus bewickii and Lapwing Vanellus vanellus	
Component SSSI/s[73]		
Breydon Water SSSI	Covers 514.40ha and contains 15 units. 100% of area in Favourable condition.	
Halvergate Marshes SSSI	Covers 1432.72ha and contains 42 units. 72.75% of area in Favourable condition, 23.71% of area in Unfavourable-Declining condition, 3.54% of area in Unfavourable-No change condition.	

[70] Taken from Natural England's European Site Conservation Objectives for Broadland SPA dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.
[71] Taken from the Natura 2000 Standard data form for site UK9009181 Breydon Water SPA dated 25-01-16.
[72] Taken from the Ramsar Information Sheet for Breydon Water dated Feb 2000.
[73] Condition status taken from Natural England data on 17th June 2019.

Conservation Objectives[74]	
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;	• The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.

Great Yarmouth North Denes SPA		
Site description summary	**Qualifying features**[75]	
Low dunes stabilised by marram grass *Ammophila arenaria* with extensive areas of grey hair-grass *Corynephorus canescens*. The Site supports important numbers of little tern *Sterna albifrons* that feed in waters close to the SPA. This SPA is part of the Great Yarmouth North Denes European Marine Site (EMS).	A195	Sterna albifrons (Little Tern) (breeding)
Component SSSI/s[76]		
Great Yarmouth North Denes SSSI	Covers 100.75ha and contains 2 units. 100% of area in Favourable condition.	
Winterton – Horsey Dunes SSSI	Covers 426.95ha and contains 12 units. 67.92% of area in Favourable condition, 9.88% of area in Unfavourable-Recovering condition, 22.20% of area in Unfavourable-No change condition.	
Conservation Objectives[77]		
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;	• The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.	

Winterton – Horsey Dunes SAC

[74] Taken from Natural England's European Site Conservation Objectives for Breydon Water SPA dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice, and should be used in conjunction with the Regulation 35 Conservation Advice Package for the EMS.
[75] Taken from the Natura 2000 Standard data form for site UK9009271 Great Yarmouth North Denes SPA dated 25-01-16.
[76] Condition status taken from Natural England data on 17th June 2019.
[77] Taken from Natural England's European Site Conservation Objectives for Great Yarmouth North Denes SPA dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice, and should be used in conjunction with the Regulation 35 Conservation Advice Package for the EMS.

Site description summary	**Qualifying features**[78]	
The only significant area of dune heath on the east coast of England, which occur over an extremely base-poor dune system, and include areas of acidic dune grassland as an associated acidic habitat. These acidic soils support swamp and mire communities, in addition to common dune slack vegetation, including creeping willow *Salix repens* subsp. *argentea* and Yorkshire fog *Holcus lanatus*. The drought resistant grey hair-grass *Corynephorus canescens* is characteristic of open areas.	2110	Embryonic shifting dunes
	2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")
	2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)
	2160	Dunes with Hippophae rhamnoides
	2190	Humid dune slacks
	1166	Triturus cristatus (Great Crested Newt)
Component SSSI/s[79]		
Winterton – Horsey Dunes SSSI	Covers 426.95ha and contains 12 units. 67.92% of area in Favourable condition, 9.88% of area in Unfavourable-Recovering condition, 22.20% of area in Unfavourable-No change condition.	
Conservation Objectives[80]		
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, and, • The supporting processes on which the qualifying natural habitats rely.	

Paston Great Barn SAC		
Site description summary	**Qualifying features**[81]	
Nationally, this is an extremely rare example of a maternity roost of barbastelle bats *Barbastella barbastellus* in a building. A 16th century thatched barn with associated outbuildings. The maternity colony inhabits many crevices and cracks in the roof timbers.	1308	Barbastella barbastellus (Barbastelle bat) (permanent population)
Component SSSI/s[82]		
Paston Great Barn SSSI	Covers 0.96ha and contains 1 unit. 100% of area in Favourable condition.	

[78] Taken from the Natura 2000 Standard data form for site UK0013043 Winterton – Horsey Dunes SAC dated 25-01-16.
[79] Condition status taken from Natural England data via Magic Map on 7th March 2017.
[80] Taken from Natural England's European Site Conservation Objectives for Winterton-Horsey Dunes SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.
[81] Taken from the Natura 2000 Standard data form for site UK0030235 Paston Great Barn SAC dated December 2015.
[82] Condition status taken from Natural England data on 17th June 2019.

Conservation Objectives[83]	
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, and, • The distribution of qualifying species within the site.

Overstrand Cliffs SAC		
Site description summary	**Qualifying features**[84]	
Vegetated soft cliffs composed of Pleistocene clays and sands, subject to common cliff-falls and landslips. Vegetation undergoes cycles whereby ruderal-dominated communities develop on the newly exposed sands and mud, succeeded by more stable grassland and scrub vegetation. In areas where freshwater seepages occur there are fen communities and occasional perched reedbeds. The diverse range of habitats support a large number of invertebrate species.	1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts
Component SSSI/s[85]		
Overstrand Cliffs SSSI	Covers 57.75ha and contains 2 units. 100% of area in Favourable condition.	
Conservation Objectives[86]		
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, and • The supporting processes on which the qualifying natural habitats rely.	

Waveney & Little Ouse Valley Fens SAC		
Site description summary	**Qualifying features**[87]	
Calcareous fen containing extensive beds of great fen-sedge *Cladium mariscus*. Purple moor-grass – meadow thistle *Molinia caerulea* – *Cirsium dissectum* fen-meadows, associated with the spring-fed valley fen systems, occur	6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)

[83] Taken from Natural England's European Site Conservation Objectives for Paston Great Barn SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.
[84] Taken from the Natura 2000 Standard data form for site UK0030232 Overstrand Cliffs SAC dated December 2015.
[85] Condition status taken from Natural England data on 17th June 2019.
[86] Taken from Natural England's European Site Conservation Objectives for Overstrand Cliffs SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.
[87] Taken from the Natura 2000 Standard data form for site UK0012882 Waveney and Little Ouse Valley Fens SAC dated December 2015.

in conjunction with black bog-rush – blunt-flowered rush *Schoenus nigricans – Juncus subnodulosus* mire and calcareous fens with great fen-sedge. Grazed areas of fen-meadow are more species-rich, and frequently support southern marsh-orchid *Dactylorhiza praetermissa*.	7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae
	1016	Vertigo moulinsiana (Desmoulin's whorl snail)
Component SSSI/s[88]		
Blo' Norton and Thelnetham Fen SSSI	Covers 21.32ha and contains 6 units. 35.08% of area in Favourable condition, 64.92% of area in Unfavourable-Recovering condition.	
Redgrave and Lopham Fens SSSI	Covers 127.03ha and contains 4 units. 100% of area in Unfavourable-Recovering condition.	
Weston Fen SSSI	Covers 49.73ha and contains 10 units. 49.79% of area in Favourable condition, 33.02% of area in Unfavourable-Recovering condition, 17.19% of area in Unfavourable-No change condition.	
Conservation Objectives[89]		
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, and, • The distribution of qualifying species within the site.	

Redgrave and South Lopham Fens Ramsar	
Site description summary	**Qualifying features**[90]
An extensive area of spring-fed valley fen at the headwaters of the River Waveney which supports a variety of fen plant community types, including *Molinia*-based grasslands, mixed sedge-fen, and reed-dominated fen. Small areas of wet heath, sallow carr, and birch woodland also occur, and the Site is known to support the fen raft spider *Dolomedes plantarius*.	The site is an extensive example of spring-fed lowland base-rich valley, remarkable for its lack of fragmentation.
	The site supports many rare and scarce invertebrates, including a population of the fen raft spider *Dolomedes plantarius*. This spider is also considered vulnerable by the IUCN Red List.

[88] Condition status taken from Natural England data on 17th June 2019.
[89] Taken from Natural England's European Site Conservation Objectives for Waveney and Little Ouse Valley Fens SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.
[90] Taken from the Ramsar Information Sheet for Redgrave and South Lopham Fen Ramsar dated May 2005.

	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.
Component SSSI/s[91]	
Redgrave and Lopham Fens SSSI	Covers 127.03ha and contains 4 units. 100% of area in Unfavourable-Recovering condition.
Conservation Objectives	
n/a	

Breckland SPA/SAC		
Site description summary	**SPA qualifying features**[92]	
A gently rolling plateau underlain by cretaceous chalk bedrock covered with thin deposits of sand and flint. The climate and free-draining soils has produced dry heath and grassland communities. Pingos with biological interest occur in some areas. The highly variable soils of Breckland, with underlying chalk being largely covered with wind-blown sands, have resulted in mosaics of heather-dominated heathland, acidic grassland and calcareous grassland that are unlike those of any other site. Breckland is the most extensive surviving area of the rare sheep's fescue – mouse-ear hawkweed – wild thyme *Festuca ovina – Hieracium pilosella – Thymus praecox* grassland type. A number of the water bodies within the site support populations of amphibians, including great crested newts *Triturus cristatus*.	A133	Burhinus oedicnemus (Stone Curlew) (breeding)
	A224	Caprimulgus europaeus (Nightjar) (breeding)
	A246	Lullula arborea (Woodlark) (breeding)
	SAC qualifying features[93]	
	2330	Inland dunes with open Corynephorus and Agrostis grasslands
	3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation
	4030	European dry heaths
	6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)
	91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)
	1308	Barbastella barbastellus (Barbastelle bat)
	1166	Triturus cristatus (Great Crested Newt)

[91] Condition status taken from Natural England data on 17th June 2019.
[92] Taken from the Natura 2000 Standard data form for site UK9009201 Breckland SPA dated December 2015.
[93] Taken from the Natura 2000 Standard data form for site UK0019865 Breckland SAC dated December 2015.

Component SSSI/s[94] (within SPA, SAC or both)	
Barnham Heath SSSI	Covers 78.62ha and contains 2 units. 89.45% of area in Favourable condition, 10.55% of area in Unfavourable-Recovering condition.
Barnhamcross Common SSSI	Covers 69.08ha and contains 2 units. 100% of area in Unfavourable-Recovering condition.
Berner's Heath, Icklingham SSSI	Covers 235.86ha and contains 3 units. 97.09% of area in Favourable condition, 2.91% of area destroyed.
Breckland Farmland SSSI	Covers 13392.36ha and contains 70 units. 100% of area in Favourable condition.
Breckland Forest SSSI	Covers 18125.99ha and contains 7 units. 0.09% of area in Favourable condition, 99.91% of area in Unfavourable-Recovering condition.
Bridgham & Brettenham Heaths SSSI	Covers 439.91ha and contains 6 units. 12.75% of area in Favourable condition, 87.25% of area in Unfavourable-Recovering condition.
Cavenham – Icklingham Heaths SSSI	Covers 419.01ha and contains 27 units. 30.59% of area in Favourable condition, 65.03% of area in Unfavourable-Recovering condition, 1.78% of area in Unfavourable-No change condition. 2.59% destroyed.
Cranberry Rough, Hockham SSSI	Covers 81.13ha and contains 4 units. 21.62% of area in Favourable condition, 78.38% of area in Unfavourable-Recovering condition.
Cranwich Camp SSSI	Covers 13.10ha and contains 1 unit. 100% of area in Unfavourable-Recovering condition.
Deadman's Grave, Icklingham SSSI	Covers 127.33ha and contains 6 units. 14.17% of area I Favourable condition, 83.80% of area in Unfavourable-Recovering condition, 2.03% of area in Unfavourable-Declining condition.
East Wretham Heath SSSI	Covers 141.05ha and contains 6 units. 7% of area in Favourable condition, 89.08% of area in Unfavourable-Recovering condition, 3.92% of area in Unfavourable-Declining condition.
Eriswell Low Warren SSSI	Covers 7.42ha and contains 1 unit. 100% of area in Favourable condition.
Field Barn Heaths, Hilborough SSSI	Covers 17.86ha and contains 1 unit. 100% of area in Unfavourable-Recovering condition.
Foxhole Heath, Eriswell SSSI	Covers 85.17ha and contains 1 unit. 100% of area in Favourable condition.
Gooderstone Warren SSSI	Covers 21.63ha and contains 4 units. 100% of area in Unfavourable-Recovering condition.
Grime's Graves SSSI	Covers 66.12ha and contains 3 units. 26.79% of area in Favourable condition, 73.21% of area in Unfavourable-Recovering condition.
How Hill Track SSSI	Covers 3.11ha and contains 1 unit. 100% of area in Favourable condition.
Lakenheath Warren SSSI	Covers 588.33ha and contains 11 units. 1.62% of area in Favourable condition, 63.40% of area in

[94] Condition status taken from Natural England data via Magic Map on 3 December 2019.

	Unfavourable-Recovering condition, 34.99% of area in Unfavourable-No change condition.
RAF Lakenheath SSSI	Covers 111ha and contains 4 units. 100% of area in Favourable condition.
Little Heath, Barnham SSSI	Covers 46.25ha and contains 3 units. 13.52% of area in Favourable condition, 2.59% of area in Unfavourable-Recovering condition, 83.89% of area in Unfavourable-Declining condition.
Old Bodney Camp SSSI	Covers 32.76ha and contains 2 units. 100% of area in Favourable condition.
Rex Graham Reserve SSSI	Covers 2.76ha and contains 1 unit. 100% of area in Favourable condition.
Stanford Training Area SSSI	Covers 4677.96ha and contains 81 units. 42.12% of area in Favourable condition, 54.71% of area in Unfavourable-Recovering condition, 3.12% of area in Unfavourable-No change condition, 0.05% of area in Unfavourable-Declining condition.
Thetford Golf Course & Marsh SSSI	Covers 122.30ha and contains 8 units. 3.12% of area in Favourable condition, 67.83% of area in Unfavourable-Recovering condition, 29.05% of area in Unfavourable-No change condition.
Thetford Heaths SSSI	Covers 270.58ha and contains 4 units. 36.32% of area in Favourable condition, 57.06% of area in Unfavourable-Recovering condition, 6.62% of area in Unfavourable-No change condition.
Wangford Warren and Carr SSSI	Covers 67.79ha and contains 5 units. 22.65% of area in Favourable condition, 77.35% of area in Unfavourable-Recovering condition.
Weather and Horn Heaths, Eriswell SSSI	Covers 133.32ha and contains 3 units. 97.77% of area in Unfavourable-Declining condition, 2.23% of area Partially destroyed.
Weeting Heath SSSI	Covers 141.75ha and contains 6 units. 40.15% of area in Favourable condition, 38.97% of area in Unfavourable-Recovering condition, 20.88% of area in Unfavourable-No change condition.
West Stow Heath SSSI	Covers 44.30ha and contains 5 units. 14.51% of area in Favourable condition, 85.49% of area in Unfavourable-Recovering condition.
SPA Conservation Objectives[95]	
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;	• The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and,

[95] Taken from Natural England's European Site Conservation Objectives for Breckland SPA dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.

	• The distribution of the qualifying features within the site
SAC Conservation Objectives[96]	
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, and, • The distribution of qualifying species within the site.

Benacre to Easton Bavents Lagoons SAC/Benacre to Easton Bavents SPA		
Site description summary	**SAC qualifying features**[97]	
Situated on the east coast of Suffolk, this site includes semi-natural broadleaved woodland, tall fen vegetation, shingle, dunes and grassland, saltmarsh and coastal lagoons. The habitats are important for breeding, wintering and passage birds. There are a series of percolating lagoons that have formed behind shingle barriers and are a feature of a geomorphologically dynamic system. The site supports a number of specialist lagoonal species. The SPA is part of the Benacre to Easton Bavents European Marine Site.	1150	Coastal lagoons
	91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)
	SPA qualifying features[98]	
	A021	Botaurus stellaris (Bittern) (breeding)
	A081	Circus aeruginosus (Marsh Harrier) (breeding)
	A195	Sterna albifrons (Little Tern) (breeding)
Component SSSI/s[99]		
Pakefield to Easton Bavents SSSI	Covers 735.45ha and contains 51 units. 48.73% of area in Favourable condition, 38.98% of area in Unfavourable-Recovering condition, 8.73% of area in Unfavourable-No change condition, 3.11% Unfavourable-Declining condition, 0.45% of area Partially destroyed.	
SAC Conservation Objectives[100]		
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	• The extent and distribution of qualifying natural habitats • The structure and function (including typical species) of qualifying natural habitats, and	

[96] Taken from Natural England's European Site Conservation Objectives for Breckland SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.
[97] Taken from the Natura 2000 Standard data form for site UK0013104 Benacre to Easton Bavents Lagoons SAC dated December 2015.
[98] Taken from the Natura 2000 Standard data form for site UK9009291 Benacre to Easton Bavents SPA dated December 2015.
[99] Condition status taken from Natural England data on 17th June 2019.
[100] Taken from Natural England's European Site Conservation Objectives for Benacre to Easton Bavents Lagoons SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.

Qualifying Features, by maintaining or restoring;	• The supporting processes on which qualifying natural habitats rely.
SPA Conservation Objectives[101]	
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;	• The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.

Dew's Ponds SAC		
Site description summary	**Qualifying features**[102]	
A series of 12 ponds located in rural East Suffolk, in formerly predominantly arable land. Great Crested Newt has been found in all ponds. Some of the arable land has been converted to grassland and there are also hedgerows and ditches.	1166	Triturus cristatus (Great Crested Newt)
Component SSSI/s[103]		
Dew's Ponds SSSI	Covers 6.72ha and contains 4 units. 100% of area in Favourable condition.	
Conservation Objectives[104]		
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, and, • The distribution of qualifying species within the site.	

The Wash and North Norfolk Coast SAC (inshore)		
Site description summary	**Qualifying features**[105]	
The Wash is the largest embayment in the UK and is connected to the North Norfolk Coast	1110	Sandbanks which are slightly covered by sea water all the time

[101] Taken from Natural England's European Site Conservation Objectives for Benacre to Easton Bavents SPA dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice, and should be used in conjunction with the Regulation 35 Conservation Advice Package for the EMS.
[102] Taken from the Natura 2000 Standard data form for site UK0030133 Dew's Ponds SAC dated December 2015.
[103] Condition status taken from Natural England data on 17th June 2019.
[104] Taken from Natural England's European Site Conservation Objectives for Dew's Ponds SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice.
[105] Taken from the Natura 2000 Standard data form for site UK0017075 The Wash and North Norfolk Coast SAC dated December 2015.

via sediment transfer systems. Together The Wash and North Norfolk Coast form one of the most important marine areas in the UK and European North Sea coast, and include extensive areas of varying, but predominantly sandy, sediments subject to a range of conditions. Communities in the intertidal include those characterised by large numbers of polychaetes, bivalve and crustaceans. Subtidal communities cover a diverse range from the shallow to the deeper parts of the embayments and include dense brittlestar beds and areas of an abundant reef-building worm ('ross worm') Sabellaria spinulosa. The embayment supports a variety of mobile species, including a range of fish, otter Lutra lutra and common seal Phoca vitulina. The extensive intertidal flats provide ideal conditions for common seal breeding and hauling-out. This SAC is part of The Wash and North Norfolk Coast European Marine Site.	1140	Mudflats and sandflats not covered by seawater at low tide
	1150	Coastal lagoons
	1160	Large shallow inlets and bays
	1170	Reefs
	1310	Salicornia and other annuals colonizing mud and sand
	1320	Spartina swards (Spartinion maritimae)
	1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)
	1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)
	1364	Halichoerus grypus (Grey Seal)
	1355	Lutra lutra (Eurasian Otter)
	1365	Phoca vitulina (Harbour/Common Seal)
Component SSSI/s		
The Wash SSSI	62045.64ha of which 67.98 is favourable, and 31.61% is unfavourable recovering. 0.41% of the area is unfavourable declining.	
Conservation Objectives[106]		
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, and, • The distribution of qualifying species within the site.	

North Norfolk Coast SPA (marine)/SAC (inshore)/Ramsar		
Site description summary	**SAC qualifying features**[107]	
Important within Europe as one of the largest areas of undeveloped coastal habitat of its type, supporting intertidal mudflats and sandflats, coastal waters, saltmarshes, shingle, sand dunes, freshwater grazing marshes, and reedbeds. Large numbers of waterbirds use the Site throughout the year. In Summer, the Site and surrounding area are important for breeding populations of four species of tern, waders, bittern *Botaurus stellaris*, and wetland raptors including marsh harrier *Circus aeruginosus*. In Winter, the Site	1150	Coastal lagoons
	1220	Perennial vegetation of stony banks
	1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)
	2110	Embryonic shifting dunes
	2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")

[106] Taken from Natural England's European Site Conservation Objectives for The Wash and North Norfolk SAC dated 30th June 2014- version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice, and should be used in conjunction with the Regulation 35 Conservation Advice Package for the EMS.

[107] Taken from the Natura 2000 Standard data form for site UK0019838 North Norfolk Coast SAC dated December 2015.

supports large numbers of geese, sea ducks, other ducks and waders using the Site for roosting and feeding. The Site is also important for migratory species during the Spring and Autumn. This SAC is part of the North Norfolk Coast European Marine Site. The SPA is designated for supporting a number of rare or vulnerable (Article 4.1) Annex I bird species during the breeding season. In addition, the SPA is designated for supporting regularly occurring migratory (Article 4.2) species during the breeding season and over winter. This SPA is part of The Wash and North Norfolk Coast European Marine Site (EMS).	2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")
	2160	Dunes with Hippophae rhamnoides
	2190	Humid dune slacks
	1355	Lutra Lutra (Eurasian Otter)
	1395	Petallophyllum ralfsii (Petalwort)
	1166	Triturus cristatus (Great Crested Newt)
	SPA qualifying features[108]	
	A040	Anser brachyrhynchus (Pink-footed Goose) (over winter)
	A050	Anas penelope (Wigeon) (over winter)
	A021	Botaurus stellaris (Bittern) (breeding)
	A675	Branta bernicla bernicla (Dark-bellied Brent Goose) (over winter)
	A143	Callidris canutus (Red Knot) (over winter)
	A081	Circus aeruginosus (Marsh Harrier) (breeding)
	A132	Recurvirostra avosetta (Avocet) (breeding and over winter)
	A195	Sterna albifrons (Little Tern) (breeding)
	A193	Sterna hirundo (Common tern) (breeding)
	A191	Sterna sandvicensis (Sandwich Tern) (breeding)
	WATR	Waterfowl assemblage
	Ramsar qualifying features[109]	
	The site is one of the largest expanses of undeveloped coastal habitat of its type in Europe. It is a particularly good example of a marshland coast with intertidal sand and mud, saltmarshes, shingle banks and sand dunes. There are a series of brackish-water lagoons and extensive areas of freshwater grazing marsh and reed beds.	
	Supports at least three British Red Data Book and nine nationally scarce vascular plants, one British Red Data Book lichen and 38 British Red Data Book invertebrates.	
	98462 waterfowl peak count in winter (assemblages of international importance)	
	Sterna sandvicensis (Sandwich Tern) (breeding)	
	Sterna hirundo (Common Tern) (breeding)	
	Sterna albifrons (Little Tern) (breeding)	

[108] Taken from the Natura 2000 Standard data form for site UK9009031 North Norfolk Coast SPA dated December 2015.
[109] Taken from the Ramsar Information Sheet for North Norfolk Coast dated 13-06-08.

	Calidris canutus (Red Knot) (over winter)
	Anser brachyrhynchus (Pink-footed Goose) (over winter)
	Branta bernicla bernicla (Dark-bellied Brent goose) (over winter)
	Anas penelope (Wigeon) (over winter)
	Anas acuta (Pintail) (over winter)
Component SSSI/s[110]	
North Norfolk Coast SSSI	Covers 7862.29ha and contains 70 units. 97.82% of area in Favourable condition, 2.18% of area in Unfavourable-Recovering condition.
SAC Conservation Objectives[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, and, • The distribution of qualifying species within the site.
SPA Conservation Objectives[112]	
Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;	• The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.

Southern North Sea cSAC (offshore and inshore)		
Site description summary	**Qualifying features**[113]	
The Southern North Sea site has been recognised as 'an area of predicted persistent high densities of harbour porpoise'. Therefore, the Southern North Sea site has been submitted to the EU and is a candidate for designation as an Inshore and	1351	Phocoena phocoena (Harbour Porpoise)

[110] Condition status taken from Natural England data on 17th June 2019.
[111] Taken from Natural England's European Site Conservation Objectives for North Norfolk Coast SAC dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice, and should be used in conjunction with the Regulation 35 Conservation Advice Package for the EMS.
[112] Taken from Natural England's European Site Conservation Objectives for North Norfolk Coast SPA dated 30th June 2014-version 2. Should be read in conjunction with the accompanying Supplementary Advice document which provides more detailed advice, and should be used in conjunction with the Regulation 35 Conservation Advice Package for the EMS.
[113] Taken from the Natura 2000 Standard Data Form for Site UK0030395 Southern North Sea SCI dated January 2017.

Offshore SAC for the Annex II species, Harbour Porpoise. The Southern North Sea site extends down the North Sea from the River Tyne, south to the River Thames. The aim of the SAC is to support the maintenance of harbour porpoise populations throughout UK waters (the Southern North Sea supports higher number of porpoises compared to many other parts of their UK range). Seasonal differences in the use of the site by harbour porpoises which show the elevated densities of the species in some parts of the site compared to others during the summer and winter, have been identified. The main threats to harbour porpoise are from incidental catch, pollution and noise/physical disturbance.		
Component SSSI/s		
n/a		
Conservation Objectives[114]		
The focus of the Conservation Objectives for harbour porpoise sites is on addressing pressures that affect site integrity and would include:	• killing or injuring significant numbers of harbour porpoise (directly or indirectly); • preventing their use of significant parts of the site (disturbance / displacement); • significantly damaging relevant habitats; or • significantly reducing the prey base.	
The Conservation Objectives document also contains the following guidance:	The seasonality in porpoise distribution should be considered in the assessment of impacts and proposed management.	

Outer Thames Estuary SPA (marine)/Outer Thames Estuary Extension pSAC (marine)		
Site description summary	**Qualifying features**[115]	
This SPA is entirely marine and is designated because its habitats support 38% of the Great British population of over-wintering Red-throated Diver *Gavia stellata*, a qualifying species under Article 4.1 of the Birds Directive. The Outer Thames Estuary SPA covers vast areas of marine habitat off the east coast between Caister-on-Sea, Norfolk in the north, down to Margate, Kent in the south. The habitats covered by the SPA include marine areas and sea inlets where Red-throated Diver is particularly susceptible to noise and visual disturbance e.g. from wind farms and coastal recreation activities. Threats from effluent discharge, oil spillages and entanglement/drowning in fishing nets are significant.	A001	Gavia stellata (Red-throated Diver) (over winter)

[114] Taken from Natural England's Harbour Porpoise (*Phocoena phocoena*) possible Special Area of Conservation: Southern North Sea Draft Conservation Objectives and Advice on Activities dated January 2016.
[115] Taken from the Natura 2000 Standard Data Form for Site UK9020309 Outer Thames Estuary SPA dated December 2015.

The addition of two new protected features and associated boundary amendments was consulted on in January to July 2016. The proposed extension would afford protection for Little tern and Common tern foraging areas, enhancing protection already afforded to their feeding and nesting areas in the adjacent coastal SPAs (Foulness SPA, Breydon Water SPA and Minsmere to Walberswick SPA).	
Component SSSI/s	
n/a	
Conservation Objectives[116]	
Subject to natural change, maintain or enhance the red-throated diver population and its supporting habitats in favourable condition.	

Haisborough, Hammond and Winterton SAC		
Site description summary	**Qualifying features**[117]	
The site lies off the north east coast of Norfolk and contains a series of sandbanks as well as Sabellaria spinulosa reefs. Small numbers of Harbour Porpoise are regularly observed within the site boundary and a large colony of breeding Grey Seal is known adjacent to the site.	1110	Sandbanks which are slightly covered by sea water all the time
	1170	Reefs
	1364	Halichoerus grypus (Grey Seal)
	1351	Phocoena phocoena (Harbour Porpoise)
Component SSSI/s		
n/a		
Conservation Objectives[118]		
For Annex 1 sandbanks which are slightly covered by seawater all the time:	Subject to natural change maintain the sandbanks in favourable condition, in particular the sub-features: • Low diversity dynamic sand communities • Gravelly muddy sand communities	
For Annex 1 Sabellaria spinulosa reefs:	Subject to natural change maintain or restore the reefs in favourable condition	

[116] Taken from Natural England's Draft advice under Regulation 35(3) of The Conservation of Habitats and Species Regulations 2010 (as amended) and Regulation 18 of The Offshore Marine Conservation (Natural Habitats, & c.) Regulations 2007 (as amended) for Outer Thames Estuary SPA Version 3.7 March 2013.

[117] Taken from the Natura 2000 Standard data form for site UK0030369 Haisborough, Hammond and Winterton SAC dated December 2015.

[118] Taken from JNCC and Natural England's Haisborough, Hammond and Winterton candidate Special Area of Conservation Formal advice under Regulation 35(3) of The Conservation of Natural Habitats and Species Regulations 2010 (as amended), and Regulation 18 of The Offshore Marine Conservation Regulations (Natural Habitats,&c.) Regulations 2007 (as amended). Version 6.0 (March 2013).