

WESTON HOMES



ECOLOGY SOLUTIONS

Part of the ES Group

ANGLIA SQUARE,
NORWICH

**Shadow
Habitats Regulations
Assessment**

Pursuant to Regulation 63
of The Conservation of
Habitats and Species
Regulations 2017
(as amended)

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1. INTRODUCTION

- 1.1. A hybrid planning application (Ref. 22/00434/F) (the Application) was submitted by Weston Homes (the Applicant) to Norwich City Council (NCC) on 1 April 2022 for the comprehensive redevelopment of Anglia Square and various parcels of mostly open surrounding land, (the Site), as shown within a red line on drawing 'ZZ-00-DR-A-01-0200'. The Application comprised a full set of technical documents to assess the potential impacts of the proposals, including an EIA which covered a number of topics.
- 1.2. Following submission of the Application, and completion of the statutory consultation exercise, amended application material (RevA) was submitted in July 2022 in response to consultation comments.
- 1.3. On completion of the second statutory consultation on the RevA material, the Applicant has worked with NCC to review the consultation responses received to identify an appropriate response where considered relevant. As a result of consideration of these comments, as well as ongoing discussions with NCC, some further minor amendments are now proposed which are summarised in the Planning Statement Addendum. The Amended Application material (RevC) submitted in January 2023 continues to seek consent for up to 1,100 dwellings and up to 8,000 Sqm (NIA) non-residential floorspace and associated development.
- 1.4. This Shadow Habitats Regulations Assessment is presented so that the Competent Authority (NCC in this case) has all the necessary information before it in order to carry out its duties in line with relevant planning policy and legislation, including specifically The Conservation of Habitats and Species Regulations 2017, as amended (hereafter referred to as the Habitats Regulations).
- 1.5. As part of the earlier application (NCC Ref. 18/00330/F), Ecology Solutions provided a *Note of Clarification to provide further information for Habitats Regulations Assessment*, dated November 2018. Much of this remains relevant to the current assessment, and is reiterated in this document where appropriate.
- 1.6. An earlier version of this Shadow Habitats Regulations Assessment document was produced in August 2022. This updated version takes account of further information and advice received from Natural England and NCC.
- 1.7. As part of this assessment, professional judgment has been applied in some instances to interpret information. This report has been produced by experienced professional ecological consultants at Ecology Solutions who are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) and are therefore both qualified and experienced to make such judgments where appropriate.
- 1.8. This document assesses the likely significant effects of the proposed development as a whole, both alone and in combination with other plans / projects.

2. CONSULTATION WITH NATURAL ENGLAND

Response 20 December 2021

- 2.1. Natural England's response to the EIA Scoping consultation, dated 20 December 2021 referred to European designated sites in the following terms:

The proposal is unlikely to adversely impact any European or internationally designated nature conservation sites (including 'habitats sites' under the NPPF) or nationally designated sites (Sites of Special Scientific Interest, National Nature Reserves or Marine Conservation Zones).

- 2.2. This position that the proposal is unlikely to adversely impact any European or internationally designated nature conservation sites was welcomed, but is not consistent with later advice on European designated sites in respect of recreation effects and nutrient neutrality.

Response 15 July 2022

- 2.3. A consultation response dated 15 July 2022 (see Appendix 1) received following the initial planning application sets out a series of further points that are relevant to this assessment.

We consider that without appropriate mitigation, the application could have potential significant effects on the following designated sites:

- **The Broads Special Area of Conservation (SAC)**
- **Broadland Special Protection Area (SPA)**
- **Broadland Ramsar**
- **Breydon Water SPA**
- **Winterton-Horsey Dunes SAC**
- **Great Yarmouth and North Denes SPA**
- **North Norfolk Coast SAC**
- **North Norfolk Coast SPA**
- **North Norfolk Coast Ramsar**
- **The Wash and North Norfolk Coast SAC**
- **The Wash SPA**
- **The Wash Ramsar**
- **Norfolk Valley Fens SAC**

...

Natural England advises that the proposal is likely to have a significant effect on the above European sites through the following impact pathways and that you should therefore obtain the following information to help you undertake the Appropriate Assessment stage of the HRA process:

a) Water quality / nutrient neutrality advice

This proposal potentially affects European Sites vulnerable to nutrient impacts. Please refer to Natural England's overarching advice dated 16th March 2022 and sent to all relevant Local Planning Authorities.

When consulting Natural England on proposals with the potential to affect water quality resulting in nutrient impacts on European Sites please ensure that an HRA is included which has been informed by the Nutrient Neutrality

Methodology (provided within our overarching advice letter). Without this information Natural England will not be in a position to comment on the significance of the impacts... Natural England notes that the applicant is currently awaiting advice from the council to be able to prepare a shadow HRA that considers the Nutrient Neutrality methodology. Therefore, the advice in this letter will focus mostly on other aspects of this application. In particular, the green infrastructure and proposed mitigation for increased recreational disturbance.

However, it is noted that in Chapter 6 of the Environmental Statement (Iceni Projects Limited, March 2022), paragraph 6.62 states that due to improvements having been made to the Sewage Treatment Works (Whitlingham Trowse WRC) in 2019, adverse effects on designated sites would be avoided. It should be noted that Natural England does not concur with this assessment or consider previous upgrades to increase the capacity at the wastewater treatment works to be acceptable mitigation, and is of the view that this development would result in additional nutrients to the River Wensum Special Area of Conservation (SAC), the Broads SAC and Broadland Ramsar. Currently there is not a mechanism to enable developers to make contributions to water companies to bring forward additional improvements to wastewater treatment works. Even if there was such a mechanism then these improvements are likely to be required to enable designated site recovery and therefore they cannot be double counted (or traded) to facilitate development as this will undermine and / or hinder restoration of the designated site. Therefore, further mitigation measures should be considered under the Habitats Regulations.

b) Recreational Disturbance Advice

Natural England's advice is that the mitigation of recreational disturbance impacts to the sites identified in paragraph 6.31 of the Environmental Statement requires a two-pronged approach involving a combination of 'on-site' informal open space provision and promotion (i.e. in and around the development site) and 'off-site' visitor access management measures (i.e. at the designated site(s) likely to be affected), as follows:

On-site mitigation measures:

We advise that, if effectively designed, the provision and promotion of 'on-site' measures can be important in containing routine recreational activities of new residents (including dog walking) within the area, thereby minimising any predicted increase in visits to the designated sites and the associated disturbance this causes. Natural England advises that all developments of 50 dwellings or more should provide such measures. To provide adequate mitigation, onsite Green infrastructure (GI) should be designed to provide a multifunctional attractive space of sufficient size to reduce frequent visits to the designated sites. The Suitable Accessible Natural Green Space (SANGS) guidance can be helpful in designing these; it should be noted that this document is specific to the SANGS creation for the Thames Basin Heaths, although the broad principles are more widely applicable but we advise that as a minimum, provisions should typically include:

- **High-quality, informal, semi-natural areas**
- **Circular dog walking routes of 2.7 km¹ within the site and/or with links to surrounding public rights of way (PRoW)**
- **Dedicated 'dogs-off-lead' areas**
- **Signage/information leaflets to householders to promote these areas for recreation**
- **Dog waste bins**
- **The long term maintenance and management of these provisions**

However, Natural England recognises the considerable constraints in fitting such measures within the site red line boundary and welcomes the work put in to the Landscape Strategy (Weston Homes, March 2022) and creating green spaces within the development. The Landscape Strategy includes a summary of the local greenspace currently available within the vicinity of the proposed development. When evaluating whether the available greenspace is suitable to minimise recreational disturbance to designated sites, the applicant may wish to refer to Natural England’s Accessible Natural Green Space Standards (ANGSt). These can also be mapped using the Green Infrastructure Map. It is our advice that these standards are also considered when ensuring that sufficient green space is provided within the development. In this case, we advise that consideration is given to enhancing and improving connectivity of these nearby greenspaces to fulfil this function. The following advice is offered for enhancing the green infrastructure within the proposed development, with the aim of further reducing potential recreational disturbance on designated sites as result of this development.

...

Off-site mitigation measures:

The unique draw of designated sites such as those identified above means that, even when well-designed, ‘on-site’ provisions are unlikely to fully mitigate impacts when developments are considered in combination. We therefore advise that consideration of ‘off-site’ measures is also required as part of the mitigation package for predicted recreational disturbance impacts. As you will be aware, Norfolk Local Planning Authorities (LPAs) are working collaboratively to deliver a Green Infrastructure and Recreational Impact Avoidance and Mitigation Strategy (GIRAMS) to ensure that the cumulative impacts of additional visitors arising from new developments of housing and tourism, to European sites, will not result in any adverse effects which cannot be mitigated. All Norfolk LPAs are collecting a tariff of £185.93 per new dwelling towards the strategic mitigation package, at the time planning permission is approved.

We welcome that the Environmental Statement recognises that this proposal will require payment into the strategy. However, paragraph 6.60 describes this payment, and the green infrastructure within the proposal, as embedded mitigation. It is Natural England’s view that these measures are not considered to be embedded and should, therefore, be considered at the appropriate assessment stage of a HRA.

- 2.4. These comments have been given due consideration as part of this assessment. Natural England’s generic advice on water quality issues dated 16 March 2022 is included as Appendix 2 and considered in the following section.
- 2.5. A further response dated 26 August 2022 (see Appendix 3) in relation to submitted amendments confirmed that *“Natural England has no further comments to add to those made in our previous response sent on 15 July 2022 (our ref: 398164)”*.
- 2.6. Subsequent to this, and to submission of an earlier version of this Shadow Habitats Regulations Assessment dated August 2022, Natural England issued further advice. This is considered below.

Response 23 September 2022

- 2.7. The consultation response of 23 September 2022 (see Appendix 4) commented on the submitted Shadow Habitats Regulations Assessment and on matters arising from a meeting held of 16 September between Natural England, NCC, Weston Homes and Ecology Solutions.
- 2.8. On recreational disturbance, the response includes the following:

The Shadow Habitats Regulations Assessment (sHRA) provided by the applicant concludes that it is possible to rule out the likelihood of significant effects arising from the proposal when considered alone.

On the basis of the information provided, it is the advice of Natural England that it is not possible to conclude that the proposal is unlikely to result in significant effects alone on the European site(s) in question. Natural England advises that the assessment currently does not provide enough information and/or certainty to justify the assessment conclusion and that your authority should not grant planning permission at this stage.

Natural England has provided advice on a previous version of this development (planning ref: 18/00330/F). Since then, we have provided additional advice to Local Planning Authorities on the recreational disturbance impacts arising from new housing development, and the Norfolk GIRAMS has been adopted by your authority. Our Interim Advice letter (dated 12 August 2019, our ref: 25769) states that “it will be anticipated that any new residential development within an identified zone will constitute a likely significant effect on the sensitive interest features of the above designated sites through increased recreational pressure, either when considered ‘alone’ or ‘in combination’. This is confirmed in the Norfolk GIRAMS report (Place Services, March 2021) which also states that mitigation for recreational impacts from individual developments alone must be provided on/near the development site in the form of Green Infrastructure (GI).

It is, therefore, Natural England’s advice that further provision of GI, either within or near to the development, is required to mitigate the impacts arising from this development alone.

- 2.9. Further advice is provided on how to approach the issue.

On-site greenspace

The Norfolk GIRAMS report states that “GI is necessary at the local (development site) level, to be secured by the LPA at the application state and strategic level (Local Plan making) level to divert and deflect visitors from the Habitats Site.” Natural England currently considers that the provision of GI within the development is inadequate for this purpose.

In considering whether adequate greenspace has been provided within the development boundary, you may find it useful to consider the Urban Greening Factor (UGF). Typically, a development of this nature should aim for a score of 0.4 or more. Some factors which improve the UGF score include flower-rich perennial planting, semi-natural vegetation and rain gardens (amongst others). Natural England considers that there is significant scope for provision of these features to improve on-site GI while greening paths throughout the development and providing additional green spaces for residents to spend time outside.

As discussed in our previous advice (dated 15 July 2022, our ref: 398164), management of GI is an important part of ensuring that the delivered green space can be considered as mitigation for recreational disturbance. It is Natural England's advice that ongoing management and monitoring should be secured through an appropriately worded condition.

...

Off-site greenspace

Improving the provision of on-site greenspace should be considered in the first instance. However, Natural England recognises the constraints in providing large areas of open green space within the development itself. Therefore, provision and enhancement of, and access to, GI off-site should also be considered. This has been achieved for housing developments in Ipswich where additional funding was secured to contribute towards measures such as improving and maintaining footpaths to existing green space within the city, promoting and publicising canal side walks including information boards, improved seating and installation of bins.

...

The sHRA has identified public greenspaces currently available within the city of Norwich, that may act to draw residents away from European sites. The majority of these sites identified are over 1km away from the development and an assessment of the attractiveness and capacity of these greenspaces to act as an alternative to visiting European designated sites for residents of the development has not been undertaken. A financial contribution may be required to improve footpaths and recreational access to some of these sites such as Mousehold Heath and Gildencroft Park. The ongoing management of existing green spaces could also be aided through financial contributions to the organisations responsible for their management. Additional measures could include improved signage and promoting of walks and greenspace that draw residents away from designated sites.

In-combination impacts

The Shadow Habitats Regulations Assessment has concluded that there is potential for the development to contribute to an in-combination effect when considered alongside other plans projects. At the appropriate assessment stage, a financial contribution of £204,523 (£185.93 x 1,100) towards the Norfolk Green Infrastructure and Recreational Impact Avoidance and Mitigation Strategy (GIRAMS) is proposed as mitigation. Natural England agrees that this is sufficient to mitigate for in-combination impacts, should the alone impacts be appropriately considered as outlined above.

- 2.10. Natural England's agreement that a payment under the GIRAMS is an acceptable approach to mitigating in-combination effects is noted. Advice with respect to on-site and off-site provision of greenspace for new residents has been taken on board in revisions to the scheme, which are considered later in this report.
- 2.11. Advice provided on water quality is as follows:

Natural England acknowledge that Norwich City Council are working with Royal HaskoningDHV and the applicant to identify Nutrient Neutrality mitigation options for the development and that this work is ongoing. In addition, that in calculating the nutrient budget for the development, the

bespoke Norfolk Calculator will be used in place of the Natural England NN calculator. Natural England has not seen a final version of the Norfolk calculator and has not provided formal comments on the bespoke Norfolk calculator. To assist in the preparation of the Shadow HRA and the NN calculator, it is our advice that the land use category for the new land use type (Stage 3 of the calculator) is selected as 'Residential Urban Land'. It is not considered that the other 'urban' land use types are applicable in this instance for this development. Furthermore, any deviation in the average water usage per person figure within the calculator from the expected RHdhv value of 110 l/day to a lower figure would not be subject to the formal comments from Natural England that are expected to be prepared once the Norfolk calculator has been finalised and Natural England informed.

- 2.12. The assessment has used the Norfolk Calculator rather than Natural England's Nutrient Neutrality Calculator, which is considered the correct approach for reasons set out later in this assessment. It was the case at the time of writing the 23 September letter that Natural England had not been able to review the Norfolk Calculator. Their position was subsequently set out in their letter of 7 October 2022, considered below.

Letter on Nutrient Neutrality Calculator 7 October 2022

- 2.13. The letter is included at Appendix 5. The following extracts are relevant to this assessment:

Natural England notes that the approach adopted in the Norfolk calculator is broadly consistent with that which underpins the Natural England nutrient budget calculator. This response therefore focusses on the elements of the Norfolk calculator for which a different approach, or different figures have been used.

...

Occupancy rates:

As set out in the Natural England Nutrient Neutral Generic Methodology and the Natural England Calculator Guidance document; "Competent authorities must satisfy themselves that the residents per dwelling / unit value used in this step of the calculation reflects local conditions in their area. The residents per dwelling value can be derived from national data providing it reflects local conditions. However, if national data does not yield a residents per dwelling / unit value that reflects local occupancy levels then locally relevant data should be used instead. Whichever figure is used, it is important to ensure it is sufficiently robust and appropriate for the project being assessed.

...

Natural England therefore support the use of locally relevant data to derive an appropriate occupancy figure for Norfolk. The Norfolk Authorities, as competent authority must be satisfied that the evidence underpinning the occupancy rate in the Norfolk calculator is sufficiently robust and appropriate. We would recommend that project level Appropriate Assessments which are informed by the Norfolk calculator specifically include justification for why the competent authority has decided upon the occupancy rate that has been used.

...

Water Usage:

The Natural England methodology and calculator recommends the addition of 10 litres per person, per day to the Building Regulations standard being applied to the planning permission (e.g. 110 litres per person, per day). The Norfolk calculator has removed this additional 10 litres per person, per day and relies on the Building Regulations standard which is secured as part of the planning permission.

The Norfolk Authorities have referenced a study to support the removal of the additional 10 litres per person, per day. It is noted that this study is of homes built to the 125 litres per person, per day standard, rather than 110 litres. We would highlight that Natural England's methodology was informed by the analysis by Waterwise of homes in London built to a stricter 105 l/person/day under the Code for Sustainable Homes which showed that actual water usage ranged between 110 to 140.75 litres per person, per day, depending on the occupancy rates (<https://www.waterwise.org.uk/knowledge-base/advice-on-waterefficient-new-homes-for-england-september-2018/>).

Natural England advise that the removal of the additional 10 litres per person, per day makes the Norfolk calculator less precautionary than the approach set out in the Natural England methodology, and the Natural England calculator.

WwTW discharge concentrations:

...

Natural England advise that the reduction (by 2mg/litre) in the values used in the Norfolk calculator for WwTW without a defined maximum nutrient concentration makes the Norfolk calculator less precautionary than the approach set out in the Natural England methodology, and the Natural England calculator.

Summary of Natural England's Advice

As set out above, Natural England considers the Norfolk calculator to have reduced the level of precaution in the nutrient budget calculation in comparison to the methodology and calculator we have produced. A reduction in the level of precaution in the nutrient budget calculation will have a corresponding increase in the potential for the mitigation delivered to be insufficient to fully address the potential for adverse effect to the Broads SAC, and River Wensum SAC.

Natural England accepts that it is the decision of the Norfolk Authorities, as Competent Authority to determine the approach (and associated calculations) taken to Appropriate Assessment of new development proposals. We therefore recommend that the Authorities take legal advice to ensure the approach taken to inform Appropriate Assessment of new development proposals is robust and not open to legal challenge.

Natural England do not intend to raise objection to the Norfolk Authorities using the Norfolk calculator to inform their Appropriate Assessments, other than the specific inclusion of the TAL figure for WwTW from 2030 onwards. As highlighted, the 2030 upgrades are not yet in legislation and therefore cannot be considered sufficiently certain to form the basis of a nutrient budget for new development proposals. Therefore, any Appropriate Assessment which relies on these figures, in advance of the relevant legislation being in place, would lead to an objection by Natural England.

Consultation responses to Appropriate Assessments relating to nutrient neutrality, which do not rely on the TAL figure from 2030 will include the following advice from Natural England:

Natural England notes that the Authority's own calculator has been used to calculate the nutrient budget for this application. This calculator deviates from the Natural England nutrient neutral methodology. As set out in our letter dated 7 Oct 2022 your Authority must be satisfied that the calculator is based on robust evidence and takes a suitably precautionary approach.

- 2.14. The views of Natural England as expressed in this letter are considered where relevant in the assessment.

3. LEGISLATIVE AND PLANNING POLICY BACKGROUND

3.1. This section of the document outlines further details regarding the legislation and planning policy of relevance to the development proposals.

3.2. Legislation and Relevant Case Law

3.2.1. The UK formally left the EU on 31 December 2020, and accordingly EC Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna (Habitats Directive) and the EC Directive on Wild Birds (Birds Directive) are no longer applicable. The Directives were transposed into domestic legislation through the Conservation of Habitats and Species Regulations 2017 (as amended) and preceding instruments. Thus the requirements of the Directives remain in effect until such time as domestic legislation is amended.

*The Conservation of Habitats and Species Regulations 2017
(as amended)*

3.2.2. The Conservation of Species and Habitats Regulations 2017 (as amended), commonly referred to as the Habitats Regulations, transpose the requirements of the Habitats Directive and Birds Directive into UK legislation. The Habitats Regulations aim to protect a network of sites in the UK that have rare or important habitats and species in order to safeguard biodiversity. The Habitats Regulations 2017 consolidate all of the previous amendments made to the Habitats Regulations 2010.

3.2.3. Under the Habitats Regulations, Competent Authorities have a duty to ensure that all the activities they regulate have no adverse effect on the integrity of any of the Natura 2000 sites (e.g. SPAs and SACs). Regulation 63 of the Habitats Regulations requires that:

63(1) A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project, which:-

(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 that site,

must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives.

63(2) A person applying for any such consent, permission or other authorisation must provide such information as the competent authority may reasonably require for the purposes of the assessment or to enable it to determine whether an appropriate assessment is required.

63(3) The competent authority must 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 specifies.

63(5) In the light of the conclusions of the assessment, and subject to regulation 64, the authority may agree to the plan or project 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).

63(6) In considering whether a plan or project will adversely affect the integrity of the site, the authority must have regard to the manner in which it is proposed to be carried out or to any conditions or restrictions subject to which it proposes that the consent, permission or other authorisation should be given.

3.2.4. Regulation 63 of the Habitats Regulations therefore sets out a two-stage process. The first test is to determine whether the plan / project is likely to have a significant effect on the European site. The second test (if applicable) is to determine whether the plan / project will affect the integrity of the European site. This would enable the competent authority to reach a judgment on its duty to ascertain that the plan / project would not adversely affect the integrity of the European Site.

3.2.5. Some key concepts of the Habitats Directive and Habitats Regulations have been clarified through case law. At the time of writing the position remains that UK courts will continue to be bound by judgments handed down by the Court of Justice of the European Union (CJEU) and domestic courts until such time as the Habitats Regulations are modified by Parliament. The most pertinent cases in relation to the development proposals are the *Waddenzee* Judgment, the *Sweetman* Cases, the *Holohan* Judgment, the *Wealden* Judgment and the *Dutch Nitrogen* Cases. These are considered in chronological order and discussed below.

Waddenzee Judgment

3.2.6. In the *Waddenzee* case (C-127/02) [2004] the European Court of Justice (CJEU) considered the trigger for Appropriate Assessment. It decided that an Appropriate Assessment is required for a plan or project where there is a probability or a risk that it will have a significant effect on the SPA. The Judgment states (at paragraph 3(a)) that:

...any plan or project not directly connected with or necessary to the management of the site is to be subject to an appropriate assessment of its implications for the site in view of the site's conservation objectives if it cannot be excluded, on the basis of objective information, that it will have a significant effect on that site, either individually or in combination with other plans or projects.

3.2.7. Hence, the need for an Appropriate Assessment should be determined on a precautionary basis. It is noted that this has been incorporated into the National Planning Practice Guidance (NPPG) on Appropriate Assessment.

3.2.8. The Judgment gives clarity that the test of 'likely significant effect' should also be undertaken in view of the relevant Conservation Objectives of the European site. It is stated at paragraph 3(b) that:

...where a plan or project not directly connected with or necessary to the management of a site is likely to undermine the site's conservation

objectives, it must be considered likely to have a significant effect on that site.

- 3.2.9. Paragraph 4 of the Judgment emphasises the requirement for the Appropriate Assessment to rely on objective scientific information:

...an appropriate assessment...implies that, prior to its approval, all the aspects of the plan or project which can, by themselves or in combination with other plans or projects, affect the site's conservation objectives must be identified in the light of the best scientific knowledge in the field. The competent national authorities, taking account of the appropriate assessment of the implications...for the site concerned in the light of the site's conservation objectives, are to authorise such an activity only if they have made certain that it will not adversely affect the integrity of that site. That is the case where no reasonable scientific doubt remains as to the absence of such effects.

Sweetman Case

- 3.2.10. Further guidance in relation to the consideration of impacts in the light of the Habitats Regulations is provided in the *Sweetman* case (*Sweetman v An Bord Pleanala* (C-258/11) [2014]). The case as set out by the Advocate General considered in detail the test for likely significant effect in paragraphs 50 and 51:

50. The test which that expert assessment must determine is whether the plan or project in question has 'an adverse effect on the integrity of the site', since that is the basis on which the competent national authorities must reach their decision. The threshold at this (the second) stage is noticeably higher than that laid down at the first stage. That is because the question (to use more simple terminology) is not 'should we bother to check' (the question at the first stage) but rather 'what will happen to the site if this plan or project goes ahead; and is that consistent with "maintaining or restoring the favourable conservation status" of the habitat or species concerned'...

51. It is plain, however, that the threshold laid down at this stage of Article 6(3) may not be set too high, since the assessment must be undertaken having rigorous regard to the precautionary principle. That principle applies where there is uncertainty as to the existence or extent of risks. The competent national authorities may grant authorisation to a plan or project only if they are convinced that it will not adversely affect the integrity of the site concerned. If doubt remains as to the absence of adverse effects, they must refuse authorisation.

- 3.2.11. The Court of Justice of the European Union (CJEU) agreed with the Advocate General's conclusions, and held:

40. Authorisation for a plan or project, as referred to in Article 6(3) of the Habitats Directive, may therefore be given only on condition that the competent authorities – once all aspects of the plan or project have been identified which can, by themselves or in combination with other plans or projects, affect the conservation objectives of the site concerned, and in the light of the best scientific knowledge in the field – are certain that the plan or project will not have lasting adverse effects on the integrity of that site. That is so where no reasonable scientific doubt remains as to the absence of such effects.

- 3.2.12. Hence a plan or project may be authorised only if no reasonable scientific doubt remains as to the absence of effects. Reasonable scientific doubt will exist if the evidence is not sufficiently conclusive, or if there are gaps in the information.

People over Wind Case (Sweetman II)

- 3.2.13. The CJEU in *People over Wind v Coillte Teoranta (C-323/17)* [2018], commonly referred to as *People over Wind* or *Sweetman II*, has reversed the position adopted under the *Dilly Lane* Decision (English High Court) which found specifically, that it was right and proper for mitigation or avoidance measures, which formed a feature of a plan / project, to be viewed as integral to the plan / project and not excluded when considering the likely significance test at Regulation 63(1).

- 3.2.14. The decision by the CJEU ruled however that:

Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site.

- 3.2.15. In accordance with this ruling, avoidance or mitigation measures cannot be considered at the first stage of the test at Regulation 63(1) (the 'Likely Significant Effect' stage), and that these can only be considered at the Appropriate Assessment stage. The *People over Wind* ruling therefore overrules domestic case law in this regard. It is noted that this is also addressed in subsequent revisions to the NPPG relating to Appropriate Assessment.

ESB Wind Developments (Sweetman III)

- 3.2.16. In this case, a request for a preliminary ruling was made to the CJEU concerning the interpretation of Articles 6(3) and 6(4) of the Habitats Directive. The request was made in relation to proceedings brought by Mr Peter Sweetman and Edel Grace against the decision of An Bord Pleanála concerning the latter's decision to grant ESB Wind Developments Ltd and Coillte permission for a wind farm project within an SPA. The ruling was handed down on 25th July 2018 (C-164/17).

- 3.2.17. This ruling distinguishes between, for the purpose of the application of Articles 6(3) and 6(4) of the Directive, 'mitigation' that consists of measures intended to avoid or reduce harm to the protected site, and measures intended to compensate for any harm (compensatory measures). It is stated:

Article 6 of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, where it is intended to carry out a project on a site designated for the protection and conservation of certain species, of which the area suitable for providing for the needs of a protected

species fluctuates over time, and the temporary or permanent effect of that project will be that some parts of the site will no longer be able to provide a suitable habitat for the species in question, the fact that the project includes measures to ensure that, after an appropriate assessment of the implications of the project has been carried out and throughout the lifetime of the project, the part of the site that is in fact likely to provide a suitable habitat will not be reduced and indeed may be enhanced may not be taken into account for the purpose of the assessment that must be carried out in accordance with Article 6(3) of the directive to ensure that the project in question will not adversely affect the integrity of the site concerned; that fact falls to be considered, if need be, under Article 6(4) of the directive.

- 3.2.18. The ruling clarifies (in the context of the specifics of that project, which concerned development *within* a designated site) what constitutes mitigation and what should correctly be termed compensation. It confirms that mitigation should be subject to Appropriate Assessment under Article 6(3) but that measures designed to compensate for any harm rather than prevent it, cannot be considered under Article 6(3) (Appropriate Assessment). In such instances, the proposal must be considered under Article 6(4) and thus it cannot be permitted unless there are “Imperative Reasons of Overriding Public Interest”.

Holohan Judgment

- 3.2.19. In the case of *Holohan v An Bord Pleanala* (C-461/17) [2018] the CJEU considered the Appropriate Assessment procedure to be adopted when considering potential impacts on a European Site. In considering this case, the CJEU ruled, amongst other matters:
- a) An Appropriate Assessment must catalogue the entirety of the habitat types and species for which a site is protected.
 - b) It must also identify and examine the implications of the proposed project for the species present on that site and for which that site has not been listed. Additionally, it must examine the implications for habitat types and species outside the boundaries of the protected site, insofar as those implications are liable to affect the site’s Conservation Objectives.
 - c) Where the competent authority rejects the findings of an expert that additional information must be obtained, the Appropriate Assessment must include a detailed statement dispelling all reasonable scientific doubt concerning effects on the protected site.
- 3.2.20. This assessment document seeks to comply with the relevant parts of the Holohan Judgment. The qualifying interest features are referred to wherever appropriate in Section 5 below. The relevant information, as submitted, is included as relevant appendices to this assessment and referenced where appropriate. Consideration has been given to implications for habitats and species located outside of the international / European designated sites, with reference to the site’s Conservation Objectives.

Wealden Judgment

- 3.2.21. In relation to air quality impacts on designated sites, until relatively recently, Natural England's advice regarding the screening threshold for a likely significant effect may be summarised as follows:

Where either the resulting deposition / concentration equates to 'less than 1% of the relevant benchmark', or the predicted Annual Average Daily Traffic (AADT) value is less than 1000, a likely significant effect can be screened out for the project when it is considered both alone and in combination with other plans or projects.

- 3.2.22. Guidance changed in the light of the High Court judgment in *Wealden v SSCLG* [2017] EWHC 351 (Admin) (commonly referred to as 'the Wealden Judgment').
- 3.2.23. The Wealden Judgment confirms that the use of the project / plan level 1000 AADT threshold (equivalent to 1% of the critical level / load for receiving habitat) as the only means of addressing in-combination effects was not appropriate, particularly where other AADT values are known and importantly which, when added together, breach the threshold. The 1000 AADT (and 1%) thresholds themselves were not questioned in terms of their use for assessment purposes.
- 3.2.24. The Judgment clarified that whilst the 1000 AADT (and 1% of the critical load / level) threshold is appropriate for use in screening assessments when applying the tests of the Habitats Regulations, a true in combination assessment must be undertaken, in view of all relevant AADT data.

The Dutch Nitrogen Cases

- 3.2.25. On 7 November 2018, the Judgment of the CJEU was handed down pursuant to a reference for a Preliminary Ruling relating to the application of Article 6 of the Habitats Directive in joined cases C-293/17 and C-294/17. The cases concerned authorisation schemes for agricultural activities which cause nitrogen deposition on Natura 2000 (European) sites in the Netherlands.
- 3.2.26. Key parts of the ruling (insofar as they are relevant to this assessment) are discussed below.
- 3.2.27. In line with preceding case law (*Waddenzee* and *Sweetman*, as discussed above), the need for scientific rigour and firm conclusions as to the absence of effects are a pre-requisite for authorisation of a plan / project. Ruling 3 in the case states:

Article 6(3) of Directive 92/43 must be interpreted as not precluding national programmatic legislation which allows the competent authorities to authorise projects on the basis of an 'appropriate assessment' within the meaning of that provision, carried out in advance and in which a specific overall amount of nitrogen deposition has been deemed compatible with that legislation's objectives of protection. That is so, however, only in so far as a thorough and in-depth examination of the scientific soundness of that assessment makes it possible to ensure that

there is no reasonable scientific doubt as to the absence of adverse effects of each plan or project on the integrity of the site concerned, which it is for the national court to ascertain.

3.2.28. Ruling 4 in the case states:

Article 6(3) of Directive 92/43 must be interpreted as not precluding national programmatic legislation, such as that at issue in the main proceedings, exempting certain projects which do not exceed a certain threshold value or a certain limit value in terms of nitrogen deposition from the requirement for individual approval, if the national court is satisfied that the 'appropriate assessment' within the meaning of that provision, carried out in advance, meets the criterion that there is no reasonable scientific doubt as to the lack of adverse effects of those plans or projects on the integrity of the sites concerned.

3.2.29. Ruling 5 in the case states:

Article 6(3) of Directive 92/43 must be interpreted as precluding national programmatic legislation, such as that at issue in the main proceedings, which allows a certain category of projects, in the present case the application of fertilisers on the surface of land or below its surface and the grazing of cattle, to be implemented without being subject to a permit requirement and, accordingly, to an individualised appropriate assessment of its implications for the sites concerned, unless the objective circumstances make it possible to rule out with certainty any possibility that those projects, individually or in combination with other projects, may significantly affect those sites, which it is for the referring court to ascertain.

3.2.30. Ruling 6 in the case confirms that any measures which are relied upon to mitigate or avoid adverse effects on the integrity of the European site in question, must be certain at the time of assessment. It is stated:

Article 6(3) of Directive 92/43 must be interpreted as meaning that an 'appropriate assessment' within the meaning of that provision may not take into account the existence of 'conservation measures' within the meaning of paragraph 1 of that article, 'preventive measures' within the meaning of paragraph 2 of that article, measures specifically adopted for a programme such as that at issue in the main proceedings or 'autonomous' measures, in so far as those measures are not part of that programme, if the expected benefits of those measures are not certain at the time of that assessment.

3.3. **Key Guidance and other Relevant Documents**

3.3.1. Guidance on the interpretation of key terms and concepts contained within the European and UK legislation of relevance to European designated sites is provided through several documents issued by the European Commission and national organisations such as the Joint Nature Conservation Committee (JNCC) and Natural England.

3.3.2. Notwithstanding that the UK left the EU on 31 December 2020, these guidance documents may still carry some weight in domestic decision-making. Section 6(2) of the EU (Withdrawal) Act 2018 (as amended) notes that courts and tribunals “*may have regard to anything done by*

the CJEU or another EU entity ... so far as it is relevant to any matter before the court or tribunal”.

Natura 2000 Standard Data Forms

- 3.3.3. A standard reporting format has been developed for Natura 2000 sites (SPAs and SACs) to ensure that the relevant site selection information is reported and stored in a consistent manner which can be easily made available.
- 3.3.4. A standard reporting form for SPAs and SACs was developed by the European Commission and published in 1996. The form is used for all sites designated or proposed to be designated as SPAs and SACs under the relevant Directives, with the information stored on a central database.
- 3.3.5. Article 4 of the Habitats Directive provides the legal basis for providing the data. Article 4 states that information shall include a map of the designated site, its name, location, extent and the data resulting from application of the criteria specified in Annex III and that this shall be provided in a format established by the Commission. Under Article 4 (paragraph 3) of the Birds Directive, Member States are required to provide the Commission with all relevant information to enable it to take any appropriate steps in order to protect relevant species in areas where the Directive applies.
- 3.3.6. Whilst it is the relevant country agency (i.e. Natural England) that is responsible for designating a site, it is the JNCC who are responsible for collating the lists of European and international designated sites, together with relevant supporting information. The Natura 2000 Data Forms for SPAs and SACs are therefore made available by JNCC.
- 3.3.7. Within the explanatory notes for Natura Standard Data Forms the following “main objectives” of the Natura data form / database are given:
- 1. to provide the necessary information to enable the Commission, in partnership with the Member States, to co-ordinate measures to create a coherent Natura 2000 network and to evaluate its effectiveness for the conservation of Annex I habitats and for the habitats of species listed in Annex II of Council Directive 92/43/EEC as well as the habitats of Annex I bird species and other migratory bird species covered by Council Directive 79/409/EEC.**
 - 2. to provide information which will assist the Commission in other decision making capacities to ensure that the Natura 2000 network is fully considered in other policy areas and sectors of the Commission's activities in particular regional, agricultural, energy, transport and tourism policies.**
 - 3. to assist the Commission and the relevant committees in choosing actions for funding under LIFE and other financial instruments where data relevant to the conservation of sites, such as ownership and management practice, are likely to facilitate the decision making process.**

4. to provide a useful forum for the exchange and sharing of information on habitats and species of Community interest to the benefit of all Member States.

- 3.3.8. The relevant Natura 2000 Standard Data Form is included in the appendices to this document.

Conservation Objectives

- 3.3.9. The formal European Site Conservation Objectives for SPAs and SACs are produced by Natural England, and are sometimes accompanied by Supplementary Advice.
- 3.3.10. The Conservation Objectives and Supplementary Advice for the relevant European designated sites are included as part of the appendices to this report.

Managing Natura 2000 Sites (European Commission, 2000)

- 3.3.11. *Managing Natura 2000 Sites the provisions of Article 6 of the Habitats Directive 92/43/CEE*, published by the European Commission in 2000, provides guidelines to Member States on the interpretation of certain key concepts used in Article 6 of the Habitats Directive.
- 3.3.12. The Managing Natura 2000 Sites document states at Section 2.3.3 that conservation measures must correspond to the ecological requirements of the habitats and species present for which the site is designated and that these requirements “*involve all the ecological needs necessary to ensure their favourable conservation status*”.
- 3.3.13. At section 3.5 the guidance states in relation to deterioration and disturbance of habitats or species:

Deterioration or disturbance is assessed against the conservation status of species and habitats concerned. At a site level, the maintenance of the favourable conservation status has to be evaluated against the initial conditions provided in the Natura 2000 standard data forms when the site was proposed for selection or designation, according to the contribution of the site to the ecological coherence of the network. This notion should be interpreted in a dynamic way according to the evolution of the conservation status of the habitat or the species.

- 3.3.14. Section 4.4.1 sets out that in determining what may constitute a likely ‘significant’ effect one should take into account the Conservation Objectives for the designated site and other relevant baseline information. In the second paragraph of this section of the document it is stated:

In this regard, the conservation objectives of a site as well as prior or baseline information about it can be very important in more precisely identifying conservation sensitivities.

- 3.3.15. Section 4.5.3 of the document sets out the duty of Member States to provide certain specific information in support of the inclusion of a site within the Natura 2000 network. This information is to be provided in a

format specified by the European Commission (the Natura 2000 Standard Data Form).

- 3.3.16. A link is drawn between the Standard Data Form and the formation of the site's conservation objectives within the text box at the end of section 4.5.3 of the guidance where it is stated:

The information provided according to the standard data form established by the Commission forms the basis for a Member State's establishment of the site's conservation objectives.

- 3.3.17. With regard to an assessment of the effects of a plan / project on the integrity of a designated site, the 'integrity of the site' is defined at Section 4.6.3 as:

... the coherence of the site's ecological structure and function, across the whole area, or the habitats, complex of habitats and / or populations of species for which the site is or will be classified.

- 3.3.18. The guidance is clear, within the text box at the foot of page 39, that an assessment as to the implications of the plan / project on the integrity of the designated site should be limited to an assessment against the site's conservation objectives:

The integrity of the site involves its ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the site's conservation objectives.

- 3.3.19. However, this guidance now sits uncomfortably with the more recent Holohan Judgment.

- 3.3.20. Section 5 of Managing Natura 2000 Sites deals with Article 6(4) of the Habitats Directive. It is noted that this section was expanded upon and replaced by further guidance issued by the European Commission entitled '*Guidance document on Article 6(4) of the Habitats Directive 92/43/EEC*' (2007), which is considered below.

Assessment of Plans and Projects Significantly Affecting Natura 2000 sites - Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (European Commission, 2001)

- 3.3.21. This document, published by the European Commission in 2001, gives guidance on carrying out and reviewing those assessments required under Article 6(3) and (4) of the Habitats Directive. It is provided as supplementary guidance and does not override or replace any of that set out within *Managing Natura 2000* which, as stated at page 6 of the document, "*is the starting point for the interpretation of the key terms and phrases contained in the Habitats Directive*". The guidance provided is not mandatory and it is clearly set out that its use is "*optional and flexible*" and that it is for "*Member States to determine the procedural requirements deriving from the directive*".

- 3.3.22. The guidance sets out the key stages in following the tests contained within the Habitats Directive. Pertinent to an assessment under Regulation 63, stages one and two are relevant. Stage one is the

screening stage assessing the likelihood of a plan / project resulting in a significant effect upon the European site. The second comprises the Appropriate Assessment.

Guidance document on Article 6(4) of the 'Habitats Directive' (European Commission, 2007)

- 3.3.23. This document, published by the European Commission in 2007, is intended to provide clarification on key terms / concepts as referred to within *Managing Natura 2000 Sites* and replaces the section on Article 6(4) within that earlier document.
- 3.3.24. The document covers the concepts of 'Alternative Solutions', 'Imperative Reasons of Overriding Public Interest', 'Compensation Measures', 'Overall Coherence' and the 'Opinion of the Commission'.
- 3.3.25. With regard to ensuring the quality of an Appropriate Assessment, and to define exactly what needs to be compensated, it is stated at Section 1.3 that:

Assessment procedures of plans or projects likely to affect Natura 2000 sites should guarantee full consideration of all elements contributing to the site integrity and to the overall coherence of the network, both in the definition of the baseline conditions and in the stages leading to identification of potential impacts, mitigation measures and residual impacts. These determine what has to be compensated, both in quality and quantity.

- 3.3.26. The need to use information contained within the Natura 2000 Standard Data Form, in tandem with the site's Conservation Objectives when undertaking an Appropriate Assessment is specifically referred to (under the second hyphenated point at Section 1.3 on page 5).
- 3.3.27. Section 1.3.2 gives guidance on the application of Article 6(4) in respect of reasons of overriding public importance and Section 1.4.1 gives guidance on the application of Article 6(4) in respect of compensatory measures.

Managing Natura 2000 Sites – The provisions of Article 6 of the Habitats Directive 92/43/EEC (European Commission, 2019)

- 3.3.28. In January 2019, the European Commission published updated guidance in relation to managing Natura 2000 sites, following initial guidance published in 2000 (see above).
- 3.3.29. The primary purpose of the revision was to incorporate relevant rulings of the Court of Justice of the European Union (EU) which have been issued since the initial guidance was published in 2000. It also integrates, into a single document, other relevant European Commission notes / guidance documents. Those key rulings (of the Court of Justice of the EU) and other relevant European Commission notes / guidance are discussed above in this report. The revised guidance provides clarifications of key concepts to Member State, authorities and stakeholders involved in the management of Natura 2000 sites (e.g. SPAs and SACs).

Guidance on the application of the precautionary principle (European Commission, 2000)

- 3.3.30. As discussed above, relevant case law makes it clear that in applying the relevant tests of the Habitats Regulations, there is a need for certainty, both regarding the nature and extent of predicted effects on integrity and in relation to the effectiveness of any preventative measures relied upon. Furthermore, enshrined within the Habitats Directive and Regulations (though not explicitly set out in either), based upon Article 191 of the Treaty on the Functioning of the European Union, is the need to apply the Precautionary Principle when assessing the risks posed to the integrity of the site/s.
- 3.3.31. If a risk of significant effect to the integrity of a site cannot be excluded on the basis of objective information, then application of the precautionary principle requires no consent to be given for such a project. The Precautionary Principle is not however without limits. It cannot be based on a purely hypothetical approach founded simply on conjecture. A preventive measure may be taken only if the risk appears nevertheless to be adequately backed up by scientific data available at the time the measure is taken.
- 3.3.32. Moreover, the document entitled '*Communication from the Commission on the Precautionary Principle*' (European Commission, 2000) provides useful guidance in relation to the application of the Precautionary Principle in relation to European sites issues. Paragraph 6 sets out the six key matters for consideration when applying the Precautionary Principle. Paragraph 6 states:
- Where action is deemed necessary, measures based on the precautionary principle should be, inter alia:**
- **proportional to the chosen level of protection;**
 - **non-discriminatory in their application;**
 - **consistent with similar measures already taken;**
 - **based on an examination of the potential benefits and costs of action or lack of action (including, where appropriate and feasible, an economic cost/benefit analysis);**
 - **subject to review, in the light of new scientific data; and**
 - **capable of assigning responsibility for producing the scientific evidence necessary for a more comprehensive risk assessment.**
- 3.3.33. Under these bullet points, the guidance gives specific definitions in relation to each of the above at pages 3 and 4, with further detail provided within section 6.
- 3.3.34. In accordance with the Communication from the Commission it is clear that when they are deemed necessary, risk reduction measures should be proportionate and must not aim at zero risk. It is stated at section 6.3.1 of the Communication from the Commission that:

The measures envisaged must make it possible to achieve the appropriate level of protection. Measures based on the precautionary principle must not be disproportionate to the desired level of protection

and must not aim at zero risk, something which rarely exists. However, in certain cases, an incomplete assessment of the risk may considerably limit the number of options available to the risk managers.

- 3.3.35. With reference to not aiming “*at zero risk*” in applying the precautionary principle, the judgment of the Appeal Court in the case of *Morge v Hampshire County Council* [2010] EWCA Civ 608 is relevant. Lord Justice Ward considered what the level of disturbance was required in the Article 12(1)(b) and at paragraph 35 he described the level or risk of threatened habitat and species stating that:

... It must be certain, that is to say, identifiable. It must be real, not fanciful.

- 3.3.36. This is understood to mean that for the level of risk to be real and identifiable, it must be based upon objective evidence to substantiate the risk. Ecology Solutions does of course note the legal tests as set out within the case law described above and the need for certainty as to the absence of effects (for example). However, as part of the assessment process, in considering the available scientific information, it is necessary to assess real (identifiable) risks as opposed to those of a purely hypothetical nature with no scientific foundation.

- 3.3.37. It is acknowledged that this case went before the Supreme Court [2011], where Lord Brown was not in agreement with all parts of Lord Justice Ward’s judgment; nevertheless, he did not expressly disagree with paragraph 35.

Internal Guidance to decisions on ‘Site Integrity’: A framework for provision of advice to competent authorities (English Nature, 2004)

- 3.3.38. Natural England (English Nature at the time) produced an internal guidance document on the provision of advice to competent authorities regarding the concept of ‘site integrity’ in undertaking an Appropriate Assessment.

- 3.3.39. This guidance sets out a definition for integrity. It states that integrity is considered at the site level and gives the following definition (taken from PPG9, subsequently replaced by the NPPF):

The coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and / or levels of populations of the species for which it was classified.

- 3.3.40. Integrity is further defined within section 3.0 where it is stated that:

In a dynamic context ‘integrity’ can be considered as a site having a sense of resilience and ability to evolve in ways that are favourable to conservation.

- 3.3.41. The need to maintain or restore the designated site to favourable conservation status is dealt with in the final paragraph of section 3.0. Natural England quotes guidance issued jointly by the Environment Agency, English Nature and Countryside Council for Wales.

3.3.42. The guidance provides a checklist within section 4.1, for assessing the likelihood of an adverse effect on integrity occurring as a result of the proposed plan / project. It is stated that if the answer to all of the questions posed within the checklist is “yes” then it is reasonable to conclude that there will be no adverse effect upon integrity. In the event that one or more of the answers is no, then the guidance suggests a series of further site-specific factors, listed at 4.2-4.7 of that document.

3.3.43. Specific consideration in relation to the proposed development with respect to the checklist is set out in Section 8 of this assessment.

Common Standards Monitoring (JNCC, 2004)

3.3.44. Common Standards Monitoring (CSM) is a means by which condition objectives for habitats, species, or other features of designated sites (e.g. SSSIs and SPAs) are set based on key attributes of the features.

3.3.45. JNCC and the country Conservation Agencies (e.g. Natural England) developed guidance on the setting and assessing of condition objectives, as required under the Birds and Habitats Directives and set out a framework for this in 1999. This framework is provided in the form of CSM guidance which comprises a suite of documents including an *Introduction to the Guidance Manual on Common Standards Monitoring* and several species / habitat specific documents. The Guidance Manual covers various relevant concepts and terms. It also provides a background to the setting of conservation objectives and sets out the desired approach to setting targets, monitoring, management and reporting on conservation measures in designated sites.

3.3.46. The Guidance Manual and CSM guidance for individual site attributes (e.g. its bird or reptile interest) set out specific criteria regarding the identification of interest features, targets and methods of assessment. There is in-built flexibility and allowances for 'judgements to be made' when assessing, for example, favourable condition.

3.3.47. It is understood that Natural England applies the CSM approach to European designated sites through an assessment of the SSSI unit condition. This is undertaken on a cycle of approximately six years. The assessment does not relate to the Conservation Objectives of the European site but provides a tool for tailoring future management of the SSSI such that favourable condition of the interest features can be maintained or restored as appropriate.

3.4. **Planning Policy**

National Planning Policy Framework (NPPF) and ODPM / DEFRA Circular (ODPM / DEFRA, 2005)

3.4.1. Paragraphs 174 and 181 of the National Planning Policy Framework (July 2021) are of direct relevance. Paragraph 174 refers to protecting and enhancing sites of biodiversity value “*in a manner commensurate with their statutory status or identified quality in the development plan*”. Paragraph 181 states that potential SPAs, possible SACs, listed or proposed Ramsar sites and sites providing compensatory measures for

adverse effects should be afforded the same level of protection as classified SPAs and designated SACs (referred to in the NPPF as 'habitats sites').

3.4.2. Guidance on the determination of whether an effect on a European designated site is likely to be significant, together with the scope of Appropriate Assessments and ascertaining the effect on the integrity, was previously provided within Circular 06/2005 "*Biodiversity and geographical conservation – statutory obligations and their impact within the planning system*" (DEFRA). The Circular originally accompanied Planning Policy Statement 9 (PPS9) and is referenced in the NPPF at footnote 61.

3.4.3. With respect to the significance test, the Circular states at paragraph 13 that:

The decision as to whether an appropriate assessment is necessary should be made on a precautionary basis.

3.4.4. The *Waddenzee* Judgment is specifically referred to at paragraph 13 of the Circular. With regard to the need to undertake an Appropriate Assessment; this is only required where it is not possible to conclude, on the basis of objective information, that the plan / project will not have a significant effect on the European site, either individually or in combination with other plans / projects.

3.4.5. Paragraph 14 clarifies that in considering the likely significance of an effect, the decision taker should assess whether the effect would be significant in terms of the site's Conservation Objectives.

3.4.6. Paragraph 15 clarifies the importance of assessing the likely significant effect on each of the interest features for which the site is designated.

3.4.7. Guidance on the scope of an Appropriate Assessment was provided at paragraph 17:

If the decision-taker concludes that a proposed development (not directly connected with or necessary to the management of a site) is likely to significantly affect a European site, they must make an Appropriate Assessment of the implications of the proposal for the site in view of the site's conservation objectives. These relate to each of the interest features for which the site was classified...The scope and content of an Appropriate Assessment will depend on the nature, location, duration and scale of the proposed project and the interest features of the relevant site. It is important that an Appropriate Assessment is made in respect of each interest feature for which the site is classified; and for each designation where a site is classified under more than one international obligation....

3.4.8. At paragraph 20 the definition of 'integrity' for the purpose of interpreting the tests contained within the Habitats Regulations is given as:

The integrity of a site is 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 it was classified.

3.4.9. The Circular included a flow diagram setting out the series of steps competent authorities are required to take in considering proposals affecting internationally designated nature conservation sites. This was based on the information and flow charts given in guidance issued by the European Commission (European Commission Environment DG, 2001). A copy of this flow diagram is included at Appendix 6 of this assessment.

3.4.10. Paragraph 182 of the updated NPPF (July 2021) states that:

The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

3.4.11. Further guidance is available at the ‘Appropriate Assessment’ section of planning practice guidance on the gov.uk website¹. This largely summarises the requirements of an assessment, in light of the case law outlined above, with particular regard afforded to changes arising as a result of the *People over Wind* Judgment.

3.5. **Norfolk Green Infrastructure and Recreational Impact Avoidance and Mitigation Strategy (GIRAMS)**

3.5.1. The Norfolk Green Infrastructure and Recreational Impact Avoidance and Mitigation Strategy (GIRAMS), published in March 2021, defines Zones of Influence for various Norfolk Habitats Sites (aka European Designated Sites) with regard to recreational impacts, as set out in the table below. This position was endorsed by Natural England in its letter of 12 August 2019 (included as Appendix 1 to the GIRAMS).

3.5.2. Table 3.1 below sets out the designations and their Zones of Influence, as defined in the GIRAMS.

Area	European Designated Sites	ZoI (km)
Breckland sites	Breckland SPA Breckland SAC	26
Broads sites	The Broads SAC Broadland SPA Broadland Ramsar	25
East Coast sites	Breydon Water SPA Winterton-Horsey Dunes SAC Great Yarmouth and North Denes SPA	30
North Coast sites	North Norfolk Coast SAC North Norfolk Coast SPA North Norfolk Coast Ramsar The Wash and North Norfolk Coast SAC	42
Roydon and Dersingham	Roydon Common and Dersingham Bog SAC Roydon Common Ramsar Dersingham Bog Ramsar	12

¹ Ministry of Housing, Communities and Local Government. *Guidance – Appropriate Assessment*. Available at: <http://www.gov.uk/guidance/appropriate-assessment> (published 22 July 2019).

Norfolk Valley Fens	Norfolk Valley Fens SAC	15
The Wash	The Wash SPA The Wash Ramsar The Wash and North Norfolk Coast SAC	61

Table 3.1. Zone of Influence for Norfolk Habitats Sites for recreational impacts.

3.5.3. The Site is within the Zone of Influence for the following:

- Broads Sites;
- East Coast Sites;
- North Coast Sites; and
- Norfolk Valley Fens.

3.5.4. The designations listed by Natural England in their consultation response of 15 July 2022 fall within these broader categories. It is noted that the River Wensum SAC is not included in the GIRAMS or Natural England's July response.

3.5.5. Natural England's advice in their August 2019 letter was that if new residential development were proposed within the Zone of Influence of these designations, Likely Significant Effect on integrity through recreation effects should be assumed. Proposals would in such circumstances need to demonstrate that adverse effects would be avoided, when considered alone and in combination with other plans or projects. Sites of 50 units or more should include provision of well-designed open space / green infrastructure, proportionate to its scale, as well as make a financial contribution per unit according to the tariff set out in the GIRAMS.

3.5.6. The Impact Risk Zone for River Wensum SSSI (which underpins River Wensum SAC) is defined on the MAGIC website as 4km, which covers the Site. A Zone of Influence has not been defined in the same way as the other designations noted above. The River Wensum is subject to a long term strategy, published in 2018, aimed at enabling change and regeneration through improving public access.

3.5.7. Section 1.2 of the GIRAMS sets out the rationale and requirement for a strategy:

Consultants 'Footprint Ecology' undertook surveys in 2015-16, the results of which provided local authorities in Norfolk with information to underpin reviews of their Local Plans, Habitats Regulations Assessments and this Strategic solution for avoidance and mitigation. The results highlight how an increase in recreational pressure (particularly at the North Coast, the Broads and the Valley Fens) is predicted to be linked with residential development across multiple local authorities and that solutions are likely to be most effective if delivered and funded in partnership.

In other parts of the country, strategic mitigation schemes have been established involving partnerships of local authorities delivering mitigation funded through developer contribution schemes. Such

approaches would provide Norfolk authorities with an effective way of delivering mitigation and some recommendations for mitigation approaches are given.

The HRA work undertaken for the individual Local Plans in Norfolk has identified a common theme regarding the potential for recreational activities to disrupt the protection objectives of Habitats Sites in and around Norfolk. This is related to the level of growth in each Local Plan, specifically an increase in population resulting from identified new housing requirements that are within the 'Zone of Influence' (ZOI) for likely significant effects regarding recreational disturbance at Habitats Sites.

ZOIs represent the extent of land around Habitats Sites within which residents travel to them for recreational activities, as evidenced by extensive survey work. Local Plan allocated growth will result in more people visiting and possibly harming Habitats Sites. Effects can occur from activities as varied as dog walking to water sports.

In response to the potential of an increased population to cause harm to Habitats Sites across all of Norfolk, from individual developments alone and also when considered with effects from other plans and projects (known as 'in-combination effects'), there is an opportunity to address mitigation strategically, in this instance at the County level. The role of Green Infrastructure at both development site and Local Plan levels is key to diverting and deflecting new residents from visiting Habitats Sites for their daily recreational needs; however as residual effects cannot be ruled out, strategic mitigation is also proposed within this document for mitigation measures to be delivered at the Habitats Sites to deal with residual effects following avoidance measures on development sites.

- 3.5.8. The Footprint Ecology report cited in the GIRAMS is referred to elsewhere in this document as Panter *et al.* (2016)².
- 3.5.9. Section 2.4.3 refers to the Habitats Regulations Assessment of Greater Norwich Regulation 18 Draft Plan:

The document concludes that the Greater Norwich Local Plan Strategy would have no adverse effect upon the integrity of any European site acting alone if there is "satisfactory completion of the Green Infrastructure and Recreational impact Avoidance Mitigation Strategy (Section 5) that provides:

- A tariff-based payment taken from residential, and other relevant accommodation e.g. tourist accommodation, that will be used to fund a mixture of mitigation measures, most likely consisting of soft and hard mitigation measures at the designated natural sites themselves to increase their resilience to greater visitor numbers.**
- The provision of suitable alternative natural green space (SANGs), which would be large enough to meet a range of needs and sufficiently well publicised for effective mitigation. The current Broadland District Council Development Management DPD policy EN3 may be considered as a precedent for housing growth in the emerging Greater Norwich Local Plan, although consideration will**

² Panter, C., Liley, D. & Lowen, S. (2016). *Visitor surveys at European protected sites across Norfolk during 2015 and 2016*. Unpublished report for Norfolk County Council. Footprint Ecology.

need to be given to new evidence emerging as part of plan production.

- **Implementation of a wider programme of Green Infrastructure Improvements in accordance with current and emerging project plans so that residents of existing and proposed housing have an alternative to European sites for regular routine activities such as dog walking.**

3.5.10. Section 3.1 sets out the aims of the RAMS:

In addition to the provision of Green Infrastructure at both a development site and at the plan-making level, the RAMS aims to deliver the mitigation necessary to avoid the likely adverse effects on integrity from the ‘in-combination’ impacts of residential development that is forecast across Norfolk. It is important to acknowledge that the RAMS exists to mitigate these ‘in-combination’ effects specifically. It is not a mechanism to deliver mitigation for recreational impacts from individual residential developments alone or individually; this must be provided on or near the development site. To this extent, the RAMS is ‘strategic’ in nature.

3.5.11. Section 3.2.2 considers current recreational impacts on Norfolk Habitats Sites:

The Norfolk coast, from King’s Lynn eastwards to Great Yarmouth, has many locations which have been identified through the Conservation Objectives for the Habitats Sites as hotspots for disturbance of sensitive habitats and other features e.g. birds and seals. The Wash and North Norfolk coast SAC is important for breeding and moulting of one of Europe’s largest populations of common seal which is a designated Interest feature. During harsh winters, a prolonged cold spell can mean birds struggle to get sufficient feeding time in between tides and any disturbance in these conditions is more significant to bird populations. Some roost sites hold large concentrations of birds, but numbers may change as use fluctuates and factors other than disturbance or habitat degradation may be an issue in some locations.

According to the SIP [Site Improvement Plan] and Supplementary Advice, the Habitats Sites in the Broads are suffering from recreational impacts on SAC habitats and disturbance to wintering waterfowl in particular, is an issue on a number of Broads’ sites. This is largely a result of boat-based use of the water bodies, especially Breydon Water.

The valley fens, scattered across the county and those in the Waveney & Little Ouse valleys shared with Suffolk, support sensitive wetland habitats and rare species which are at risk from damage due to recreational pressure.

3.5.12. Section 3.4.1 sets out the justification for a single countywide tariff approach, having regard to other similar systems elsewhere in the country:

This Strategy recommends a tariff approach to ensure funds are collected and pulled together to deliver the RAMS mitigation package proposed. Although the number of ZOIs for Habitats Sites in each LPA area varies depending on the geographical position, a single county wide tariff area is recommended for the sake of simplicity. This reflects the entirety of Norfolk including all partner LPAs and would see a common tariff amount

for all net new dwellings in the county. This has been calculated from the RAMS mitigation package to cover the lifetime of the Local Plans. The tariff is proposed to be applicable to every net additional dwelling (with per bedspace and student accommodation unit ratios), unless the house builder can demonstrate to the satisfaction of the relevant LPA and Natural England that alternative avoidance and mitigation measures can be delivered in perpetuity and these will be effective at avoiding adverse effect on the integrity of the Habitats Sites, in combination with other plans and projects.

3.5.13. Section 3.4.4 recommends wording for emerging planning policy:

It will be important to secure proportionate financial contributions for relevant residential development so although HRA requires legal compliance by the LPA to avoid Adverse Effects on Integrity of Habitats Sites, a policy to identify the need for delivery of mitigation measures is recommended. The Natural England interim advice on this matter is clear and developers should be advised of the need for both sufficient natural greenspace on development sites (in line with Natural England advice Annex 1 and 11 advice) and the per-dwelling tariff of the county wide RAMS.

Suggested Policy

“The potential impacts on Habitats sites from recreational pressure from residential development will be addressed through :

(i) the provision of local level GI / open space and (ii) mitigation of residual effects through a developer contributions.

(ii) Contributions from residential developments will be secured towards mitigation measures identified in the Norfolk Recreational impact Avoidance and Mitigation Strategy (RAMS) which will be completed by the time the Local Plan is adopted. Prior to RAMS adoption, the authority will seek contributions, where appropriate, from proposed residential development to deliver all measures identified (including strategic measures) through project level HRAs, or otherwise, to mitigate any recreational impacts in compliance with the Habitats Regulations and Habitats Directive.”

3.5.14. Natural England’s letter of 12 August 2019 considers green infrastructure requirements:

Natural England recommends that large developments (50+ houses) include green space that 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. The Suitable Accessible Natural Green Space (SANGS) guidance can be helpful in designing this; it should be noted that this document is specific to the SANGS creation for the Thames Basin Heaths, although the broad principles are more widely applicable. Green infrastructure design should seek to achieve the Natural England Accessible Natural Greenspace Standards, detailed in Nature Nearby, including the minimum standard of 2ha informal open space within 300m of everyone’s home. As a minimum, we advise that such provisions should include:

- High-quality, informal, semi-natural areas
- Circular dog walking routes of 2.7 km within the site and/or with links to surrounding public rights of way (PRoW)
- Dedicated ‘dogs-off-lead’ areas

- **Signage / information leaflets to householders to promote these areas for recreation**
- **Dog waste bins**
- **to the long term maintenance and management of these provisions**

To provide adequate mitigation onsite GI should be designed to provide a multifunctional attractive space of sufficient size to reduce frequent visits to sensitive sites. It should facilitate a variety of recreational activities whilst supporting biodiversity. Evidence and advice on green infrastructure can be found on the Natural England Green Infrastructure web pages. We also recommend the Green Infrastructure Partnership as a useful source of information when creating and enhancing GI.

- 3.5.15. Annex I attached to the letter reiterates the SANG design principles, and notes that:

...the unique draw of the... European sites means that, even when well-designed, 'onsite' provisions are unlikely to fully mitigate impacts when all residential development within reach of the coast is considered together 'in combination'. We therefore advise that consideration of 'off-site' measures (i.e. in and around the relevant European designated site(s)) is also required as part of the mitigation package for predicted recreational disturbance impacts in these cases. Such measures are to be delivered strategically through the Norfolk RAMS to make the sites more resilient to increased recreational pressures. A proportionate financial contribution should therefore be secured from these developments in line with the Norfolk RAMS.

3.6. Natural England Advice Letter and Nutrient Neutrality

- 3.6.1. On 16 March 2022, Natural England issued a letter setting out advice for development proposals with the potential to affect water quality resulting in adverse nutrient impacts on habitats sites i.e. SPAs, SACs and Ramsar sites (see Appendix 2). Natural England's advice to affected Local Planning Authorities in their role as competent authority under the Habitats Regulations, which includes Norwich City Council, is to:

...carefully consider the nutrients impacts of any new plans and projects (including new development proposals) on habitats sites and whether those impacts may have an adverse effect on the integrity of a habitats site that requires mitigation, including through nutrient neutrality.

- 3.6.2. Natural England notes that it has:

Undertaken an internal evidence review to identify an initial list of water dependent habitats sites (which includes their underpinning Sites of Special Scientific Interest) that are in unfavourable condition due to elevated nutrient levels (phosphorus or nitrogen or both). These sites are listed in Annex C. Development which will add nutrients to these sites may not meet the site integrity test without mitigation. This will need to be explored as part of the HRA. Nutrient neutrality is an approach which could be used as suitable mitigation for water quality impacts for development within the catchments of these sites...

3.6.3. The advice continues:

A plan or project will be relevant and have the potential to affect the water quality of the designated site where:

- **It creates a source of water pollution (e.g. discharge, surface run off, leaching to groundwater etc) of either a continuous or intermittent nature or has an impact on water quality (e.g. reduces dilution).**

AND

- **There is hydrological connectivity with the designated site i.e. it is within the relevant surface and / or groundwater catchment.**

AND

- **The designated sites interest features are sensitive to the water quality pollutant / impact from the plan / project.**

...

Natural England advises you, as the Competent Authority under the Habitats Regulations, to fully consider the nutrients implications on the sites identified in Annex C Table 2 when determining relevant plans or projects and to secure appropriate mitigation measures.

When considering a plan or project that may give rise to additional nutrients within the affected catchments, you should undertake a HRA. An Appropriate Assessment will be needed where a likely significant effect (alone or in-combination) cannot be ruled out, even where the proposal contains mitigation provisions. The need for an Appropriate Assessment of proposals that includes mitigation measures intended to avoid or reduce the harmful effects of a plan or project is well established in case law. The Competent Authority should only grant permission if they have made certain at the time of Appropriate Assessment that the plan or project will not adversely affect the integrity of a habitats site i.e. where no reasonable scientific doubt remains as to the absence of effects.

...

Your authority may wish to consider a nutrient neutrality approach as a potential solution to enable developments to proceed in the catchment(s) where an adverse effect on site integrity cannot be ruled out. For such an approach to be appropriate, the measures used to mitigate nutrients impacts should not compromise the ability to restore the designated site to favourable condition and achieve the conservation objectives...

3.6.4. Table 2 in Annex C is entitled *Additional habitats sites in unfavourable condition due to excessive nutrients which require a Habitats Regulations Assessment (HRA) and where nutrient neutrality is a potential solution to enable development to proceed.*

3.6.5. The table includes the following designated sites relevant to the Site where Norwich City Council is the competent authority under the Habitats Regulations:

- River Wensum SAC, with phosphorus named as an excessive nutrient;
- The Broads SAC / Ramsar, limited to Bure Broads and Marshes SSSI, Trinity Broads SSSI, Yare Broads and Marshes SSSI, Ant Broads and Marshes SSSI and Upper Thurne Broads and Marshes SSSI, with nitrogen and phosphorus named as excessive nutrients.

4. LOCATION OF EUROPEAN DESIGNATED SITES

4.1. According to the Natural England letter of 12 August 2019, the Site is within the Zone of Influence of the following designations for recreation effects:

- Broadland SPA;
- Broadland Ramsar³;
- The Broads SAC;
- Breydon Water SPA;
- Winterton-Horsey Dunes SAC;
- Great Yarmouth and North Denes SPA;
- North Norfolk Coast SAC;
- North Norfolk Coast SPA;
- The Wash and North Norfolk Coast SAC; and
- Norfolk Valley Fens SAC.

4.2. In addition, the following designations are highlighted in Natural England's letter of 16 March 2022 as being relevant to considerations of effects on water quality for development within the area administered by Norwich City Council:

- Broadland SPA⁴;
- Broadland Ramsar;
- The Broads SAC; and
- River Wensum SAC.

4.3. With respect to water quality effects on Broadland SPA / Broadland Ramsar / The Broads SAC, the following SSSIs are cited in the Natural England letter of 16 March 2022:

- Bure Broads and Marshes SSSI;
- Trinity Broads SSSI;
- Yare Broads and Marshes SSSI;
- Ant Broads and Marshes SSSI; and
- Upper Thurne Broads and Marshes SSSI.

4.4. Table 4.1 below sets out the distance from the boundary of the Site to each of these designations. Information obtained from the MAGIC website and reproduced at Appendix 7 shows the location of the designations.

³ It is noted that Natural England's letter of 12 August 2019 does not cite Broadland Ramsar, but its boundaries are concurrent with that of Broadland SPA and overlap extensively with The Broads SAC. Moreover, it is cited in Natural England's letter of 15 July 2022, and it is therefore named in this assessment.

⁴ Similarly, Broadland SPA is not named in Natural England's letter of 16 March 2022. The SPA is designated for the presence of certain bird species, and while these are not directly affected by increased levels of phosphorous and / or nitrogen, the habitats on which they depend, and for which the Ramsar site and SAC are designated, would be. As previously noted, the boundaries of the SPA are concurrent with the Ramsar site and overlap extensively with the SAC, and it is therefore named in this assessment.

Designation	Distance from Site
Broadland SPA	7.6km
Broadland Ramsar	7.6km
The Broads SAC	7.6km
Breydon Water SPA	21.3km
Winterton-Horsey Dunes SAC	27.4km
Great Yarmouth and North Denes SPA	28.1km
North Norfolk Coast SAC	36.9km
North Norfolk Coast SPA	36.8km
The Wash and North Norfolk Coast SAC	37.1km
Norfolk Valley Fens SAC	13.1km
River Wensum SAC	3.2km ⁵
The Broads SAC / Ramsar SSSIs:	
Bure Broads and Marshes SSSI	10.3km
Trinity Broads SSSI	22.5km
Yare Broads and Marshes SSSI	7.6km
Ant Broads and Marshes SSSI	16km
Upper Thurne Broads and Marshes SSSI	20.5km

Table 4.1. Distance from application site to selected Norfolk designated sites.

⁵ The River Wensum as it flows through the city centre is not subject to a nature conservation designation.

5. CONSIDERATION OF BASELINE INFORMATION

5.1. In undertaking a project-level Habitats Regulations Assessment, it is necessary to have a comprehensive understanding of the relevant qualifying interest features of the international / European designated site, and the formal Conservation Objectives as defined in relation to those interest features.

5.2. In the first instance, key information has been collated and is presented below in relation to the European designated sites. This includes details in relation to the qualifying interest features of the sites and the formal Conservation Objectives.

5.3. The Broads SAC / Broadland SPA, Ramsar

The Broads SAC / Broadland SPA, Ramsar	
Site description summary	SAC qualifying features
<p>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.</p> <p>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.</p>	<p>3140 Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.</p> <p>3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation</p> <p>6410 Molinia meadows on calcareous, peaty, or clayey-silt-laden soils (Molinion caeruleae)</p> <p>7140 Transition mires and quaking bogs</p> <p>7210 Calcareous fens with Cladium mariscus and species of the Caricion davallianae</p> <p>7230 Alkaline fens</p> <p>91E0 Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)</p> <p>4056 Anisus vorticulus (Little whorlpool ram's-horn snail)</p> <p>1903 Liparis loeselii (Fen Orchid)</p> <p>1355 Lutra lutra (Eurasian Otter)</p> <p>1166 Triturus cristatus (Great Crested Newt)</p> <p>1016 Vertigo moulinsiana (Desmoulin's whorl snail)</p>
	SPA qualifying features
	<p>A056 Anas clypeata (Shoveler) (over winter)</p> <p>A050 Anas penelope (Wigeon) (over winter)</p> <p>A051 Anas strepera (Gadwall) (over winter)</p> <p>A021 Botaurus stellaris (Bittern) (breeding)</p>

	<p>A081 <i>Circus aeruginosus</i> (Marsh Harrier) (breeding)</p> <p>A082 <i>Circus cyaneus</i> (Hen Harrier) (over winter)</p> <p>A037 <i>Cygnus columbinus bewickii</i> (Bewick's Swan) (over winter)</p> <p>A038 <i>Cygnus cygnus</i> (Whooper Swan) (over winter)</p> <p>A151 <i>Philomachus pugnax</i> (Ruff) (over winter)</p>
	<p>Ramsar qualifying features</p>
	<p>H7210 Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> Calcium-rich fen dominated by great fen sedge (saw sedge).</p> <p>H7230 Alkaline fens Calcium-rich springwater-fed fens.</p> <p>H91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, <i>Alnion incanae</i>, <i>Salicion albae</i>) Alder woodland on floodplains</p> <p>Annex II species:</p> <p>S1016 <i>Vertigo moulinsiana</i> (Desmoulin's whorl snail)</p> <p>S1355 <i>Lutra lutra</i> (Eurasian Otter)</p> <p>S1903 <i>Liparis loeselii</i> Fen Orchid</p> <p>Species/populations occurring at levels of international importance:</p> <p><i>Cygnus columbianus bewickii</i>, (Bewick's Swan)</p> <p><i>Anas penelope</i> (Eurasian Wigeon)</p> <p><i>Anas strepera strepera</i> (Gadwall)</p> <p><i>Anas clypeata</i> (Shoveler)</p>

5.4. Breydon Water SPA / Ramsar

Breydon Water SPA / Ramsar	
Site description summary	SPA qualifying features
<p>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.</p> <p>This SPA is part of the Breydon Water European Marine Site.</p>	<p>A037 <i>Cygnus columbianus bewickii</i> (Bewick's Swan) (over winter)</p> <p>A151 <i>Philomachus pugnax</i> (Ruff) (concentration)</p> <p>A140 <i>Pluvialis apricaria</i> (Golden Plover) (over winter)</p> <p>A132 <i>Recurvirostra avosetta</i> (Avocet) (over winter)</p> <p>A193 <i>Sterna hirundo</i> (Common Tern) (breeding)</p> <p>A142 <i>Vanellus vanellus</i> (Northern Lapwing) (over winter)</p>
	Waterbird assemblage
	Ramsar qualifying features
	<p>Internationally important waterfowl assemblage (greater than 20000 birds) Over winter the site regularly supports internationally important numbers of: Bewick's Swan <i>Cygnus columbianus bewickii</i> and Lapwing <i>Vanellus vanellus</i></p>

5.5. Winterton-Horsey Dunes SAC

Winterton-Horsey Dunes SAC	
Site description summary	Qualifying features
<p>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 <i>Salix repens</i> subsp. <i>argentea</i> and Yorkshire fog <i>Holcus lanatus</i>. The drought resistant grey hair-grass <i>Corynephorus canescens</i> is characteristic of open areas.</p>	<p>2110 Embryonic shifting dunes</p> <p>2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes")</p> <p>2150 Atlantic decalcified fixed dunes (Calluno- Ulicetea)</p> <p>2160 Dunes with <i>Hippophae rhamnoides</i></p> <p>2190 Humid dune slacks</p> <p>1166 <i>Triturus cristatus</i> (Great Crested Newt)</p>

5.6. Great Yarmouth North Denes SPA

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

5.7. The Wash and North Norfolk Coast SAC

The Wash and North Norfolk Coast SAC	
Site description summary	Qualifying features
<p>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') <i>Sabellaria spinulosa</i>. The embayment supports a variety of mobile species, including a range of fish, otter <i>Lutra lutra</i> and common seal <i>Phoca vitulina</i>. The extensive intertidal flats provide ideal conditions for common seal breeding and hauling-out.</p> <p>This SAC is part of The Wash and North Norfolk Coast European Marine Site.</p>	<p>1110 Sandbanks which are slightly covered by sea water all the time</p> <p>1140 Mudflats and sandflats not covered by seawater at low tide</p> <p>1150 Coastal lagoons</p> <p>1160 Large shallow inlets and bays</p> <p>1170 Reefs</p> <p>1310 <i>Salicornia</i> and other annuals colonizing mud and sand</p> <p>1320 <i>Spartina</i> swards (<i>Spartinion maritimae</i>)</p> <p>1330 Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>)</p> <p>1420 Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>)</p> <p>1364 <i>Halichoerus grypus</i> (Grey Seal)</p> <p>1355 <i>Lutra lutra</i> (Eurasian Otter)</p> <p>1365 <i>Phoca vitulina</i> (Harbour/Common Seal)</p>

5.8. North Norfolk Coast SPA / SAC / Ramsar

North Norfolk Coast SPA /SAC / Ramsar	
Site description summary	SAC qualifying features
<p>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,</p>	<p>1150 Coastal lagoons</p> <p>1220 Perennial vegetation of stony banks</p>

<p>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 <i>Botaurus stellaris</i>, and wetland raptors including marsh harrier <i>Circus aeruginosus</i>. 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.</p> <p>This SAC is part of the North Norfolk Coast European Marine Site.</p> <p>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.</p> <p>This SPA is part of The Wash and North Norfolk Coast European Marine Site (EMS).</p>	<p>1420 Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>)</p> <p>2110 Embryonic shifting dunes</p> <p>2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ("white dunes")</p> <p>2130 Fixed coastal dunes with herbaceous vegetation ("grey dunes")</p> <p>2160 Dunes with <i>Hippophae rhamnoides</i></p> <p>2190 Humid dune slacks</p> <p>1355 <i>Lutra lutra</i> (Eurasian Otter)</p> <p>1395 <i>Petallophyllum ralfsii</i> (Petalwort)</p> <p>1166 <i>Triturus cristatus</i> (Great Crested Newt)</p>
	<p>SPA qualifying features</p>
	<p>A040 <i>Anser brachyrhynchus</i> (Pink-footed Goose) (over winter)</p> <p>A050 <i>Anas penelope</i> (Wigeon) (over winter)</p> <p>A021 <i>Botaurus stellaris</i> (Bittern) (breeding)</p> <p>A675 <i>Branta bernicla bernicla</i> (Dark-bellied Brent Goose) (over winter)</p> <p>A143 <i>Calidris canutus</i> (Red Knot) (over winter)</p> <p>A081 <i>Circus aeruginosus</i> (Marsh Harrier) (breeding)</p> <p>A132 <i>Recurvirostra avosetta</i> (Avocet) (breeding and over winter)</p> <p>A195 <i>Sterna albifrons</i> (Little Tern) (breeding)</p> <p>A193 <i>Sterna hirundo</i> (Common tern) (breeding)</p> <p>A191 <i>Sterna sandvicensis</i> (Sandwich Tern) (breeding)</p> <p>WATR Waterfowl assemblage</p>
	<p>Ramsar qualifying features</p>
	<p>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.</p>

5.9. Norfolk Valley Fens SAC

Norfolk Valley Fens SAC	
Site description summary	Qualifying features
<p>A series of valley-head spring-fed fens, typified by black-bog-rush - blunt-flowered rush <i>Schoenus nigricans</i> - <i>Juncus subnodulosus</i> 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 <i>Epipactis palustris</i>, narrow-leaved marsh-orchid <i>Dactylorhiza traunsteineri</i>, and alder <i>Alnus glutinosa</i> 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 <i>Vertigo moulinsiana</i>.</p>	4010 North Atlantic wet heaths with <i>Erica tetralix</i>
	4030 European dry heaths
	6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (*important orchid sites)
	6410 <i>Molinia</i> meadows on calcareous, peaty, or clayey-silt-laden soils (<i>Molinion caeruleae</i>)
	7150 Depressions on peat substrates of the <i>Rhynchosporion</i>
	7210 Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>
	7230 Alkaline fens
	91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)
	1355 <i>Lutra lutra</i> (Eurasian Otter)
	1166 <i>Triturus cristatus</i> (Great Crested Newt)
1014 <i>Vertigo angustior</i> (Narrow-mouthed whorl snail)	
1016 <i>Vertigo moulinsiana</i> (Desmoulin's whorl snail)	

5.10. River Wensum SAC

River Wensum SAC	
Site description summary	Qualifying features
<p>A calcareous lowland river considered one of the best areas in the UK for <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> 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.</p>	3260 Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation
	7210 Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i>
	91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>)
	1092 <i>Austropotamobius pallipes</i> (White-clawed (or Atlantic steam) Crayfish)
	1163 <i>Cottus gobio</i> (Bullhead)

	1096	Lampetra planeri (Brook Lamprey)
	1016	Vertigo moulinsiana (Desmoulin's whorl snail)

5.11. Conservation Objectives

- 5.11.1. The common conservation objectives for the SPAs identified are as follows:

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

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.

- 5.11.2. The common conservation objectives for SACs identified are similar, as follows:

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

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.

6. ASSESSMENT OF THE IMPLICATIONS OF THE DEVELOPMENT FOR EUROPEAN DESIGNATED SITES

- 6.1. Section 3 of this document sets out the legislation, guidance and case law of relevance to an assessment of the implications of a plan / project on a European site. Having regard to this legislation and supporting guidance, it is clear that the assessment is a two-stage process, the first being the 'likely significant effect', and the second being the 'integrity test'.
- 6.2. It is clear that the Conservation Objectives of a European site are the most important consideration in determining whether the plan / project will have an adverse effect on the site, including any effects on its integrity.
- 6.3. It is evident that there is a clear hierarchical approach to assessing effects on European sites in line with the Habitats Directive / Regulations. The primary test is that against the Conservation Objectives with other considerations following these.
- 6.4. In line with the above, while the qualifying interest features of the site and other baseline information have informed this assessment, the greatest weight has been placed upon the formal Conservation Objectives for the European sites, as set out by Natural England.
- 6.5. This section includes a description of the potentially significant effects arising from the development proposals at the application site on the integrity of each of the international / European designated sites outlined above. The potential effects are assessed within this section in order to address the test under Regulation 63 (1) in the first instance (the 'likely significant effect' stage).
- 6.6. In undertaking this assessment, regard has been had to the best available scientific knowledge. This approach is therefore consistent with the *Waddenzee* Judgement, which requires the use of the best scientific knowledge to inform a decision where no reasonable scientific doubt remains as to the presence and / or absence of effects that would adversely affect the integrity of the designated site (see Section 3 above).
- 6.7. Furthermore, consideration is given to the *People Over Wind* Judgement, which confirmed the view of the CJEU that avoidance or mitigation measures can only be taken into consideration at the Appropriate Assessment stage. This supersedes the domestic *Dilly Lane* judgement in the High Court.
- 6.8. As outlined in Section 1 above, the proposal is for up to 1,100 dwellings and with flexible retail, commercial and other non-residential floorspace (some 8,000sqm).
- 6.9. **Identification of Potential Pathways**
 - 6.9.1. In order for a likely significant effect to occur at the international / European sites, it is self-evident that there must be a potential pathway for a meaningful effect to occur. Initially, all potential pathways between the site and the designations have been identified, with consideration afforded to the likelihood of an adverse (net) effect arising as a result of the development proposals.

- 6.9.2. In identifying the potential pathways for effects, consideration has been afforded to the ecology of the qualifying features of the designations. Regard has also been given to the qualifying features of the component SSSIs.

Initial scoping of potential pathways for effects

- 6.9.3. The site is in Norwich City Centre and separated from all designations by existing built development and, in the majority of cases, significant areas of open countryside. On this basis, the proposed development will not result in any direct loss to the designations. Furthermore, given the distances and intervening land uses involved, it is considered that there would be no significant direct effects arising as a result of lighting or noise impacts during the construction or operational phases of the development proposals.

- 6.9.4. There are no direct hydrological links between the site and the designations. Hence there are no potential pathways for contamination to arise as a result of surface water run-off, siltation or waterborne pollution during the construction phase.

- 6.9.5. Potential pathways for significant effects on the designations which require further assessment are therefore considered to be limited to the following:

- **Physical damage and disturbance to qualifying habitats and species** at the designations arising from an increase in recreational pressure from new residents; and
- **Water quality impacts to qualifying habitats** arising from an increase in nitrogen and phosphorous on the named designations.

6.10. Physical Damage and Degradation to Habitats

Vulnerability

- 6.10.1. An increase in recreational pressure on a wildlife site has the potential to cause the degradation of its qualifying habitat features and / or qualifying plant species. Evidence suggests that such effects include in particular direct damage to habitat features through walking and other activities, leading to soil compaction, erosion and trampling of vegetation.
- 6.10.2. Increased recreational pressure may also result in nutrient enrichment of habitats (e.g. as a result of dog fouling), fly-tipping / littering and increased fire risk. In all but the case of fires, these potential pathways for impacts are directly related to the frequency of visits and management of visitors on site. In relation to fires, research from heathland sites indicates that this occurs generally as a result of anti-social behaviour (arson) or poor control of campfires and is more prevalent in areas of habitat immediately adjacent to residential areas.
- 6.10.3. Furthermore, some habitat types are more susceptible to damage as a result of an increase in recreational disturbance than others. Vegetation

associated with some habitats (such as dunes) can be fragile and therefore more vulnerable to disturbance and damage as a result of trampling and disturbance than other habitat types. However, sensitive habitats can be influenced by a range of other factors that are not related to recreational pressure, including scrub encroachment, natural erosion, grazing (by rabbits and stock) and hydrology.

- 6.10.4. Where existing tracks and public rights of way are clearly defined on the ground (well-worn tracks) and where suitable visitor management initiatives (e.g. signage) and a maintenance plan are in place, adverse impacts from visitor pressure are as a consequence far more limited in extent. This is because erosion effects, often associated with walkers, runners, horses and cyclists, are concentrated along specific routes, leaving the wider area free from such effects.

Consideration of Likely Significant Effects

- 6.10.5. The site is significantly separated from the nearest parts of the designations, both by road and on foot. Hence the potential for effects associated with adjoining residential development (e.g. fires) are not considered to be relevant in this case.
- 6.10.6. Given the significant distances to the designations set out in Table 4.1 above, it is not likely that new residents of the proposed development would access the designations on foot, even on an occasional basis, such that any measurable effect from physical degradation and damage to habitats could arise.
- 6.10.7. However, it is acknowledged that residents at the site could drive or use other means of transport to access open space in the local area for informal recreation, including the designations, which could lead to potential habitat damage and disturbance. Hence detailed consideration of these factors has been undertaken.

Quantifying likely effects – new residents

- 6.10.8. In order to quantify the potential increase in recreational pressure that may arise as a result of the development proposals, detailed consideration is afforded below to the scale of the application.
- 6.10.9. Regard has also been afforded to visitor survey work previously undertaken at the international / European designated sites, to seek to quantify the number of new residents who would be likely to visit the designated sites.
- 6.10.10. The development proposals are for up to 1,100 new residential dwellings. The predicated occupancy rate is 1.88 people per dwelling, or approximately 2,068 new residents.
- 6.10.11. It is unlikely that *all* new residents at the development would visit the designations for informal recreation. Indeed, it is more likely that whilst *some* new residents may visit the designations, either on occasion or more regularly, others will never visit the designated sites.

- 6.10.12. Information at the national scale (from Natural England's Monitor of Engagement with the Natural Environment survey⁶) indicates that 9% of the adult population in the east of England never spend leisure time outdoors, away from home. A total of 58% of the adult population in the east of England spend leisure time outdoors at least once a week (which is low for the country as a whole; the figure for the southeast is 71%, for example). It is important to note that this includes both formal and informal recreation and would therefore include activities such as sport and running, as well as walking and dog walking.
- 6.10.13. The data also noted that for Norfolk, between 54% or 57% of the population (two figures are given based on county and upper tier local authority information) visit outdoor places at least once a week. It is reasonable to expect that the behaviour of new residents at the site would be likely to match that of the existing residents in Norfolk. On this basis, and taking the higher figure, it is estimated that 1,179 new residents at the development would visit outdoor places at least once a week (i.e. 57% of 2,068 new residents).
- 6.10.14. It is important to remember that this includes both formal and informal recreation (such as using playing fields for activities such as sport). As a result, it is probable that this will be dispersed across a wide variety of different sites in the local area, as well as the designations.
- 6.10.15. Paragraph 3.37 of the Panter *et al.* (2016) report notes that the majority of visitors to the designations (77%) arrived by car, followed by those arriving on foot (18%). A maximum of 450 permanent parking spaces will be available to new residents of the proposed development, in addition to five car club spaces. Adding these to the permanent spaces, approximately 41% ($450+5 / 1100$) of dwellings will have access to a parking space and car at any one time. Assuming that these are available to all residents equally, this would mean that of the estimated 1,179 new residents projected to visit outdoor places at least once per week, some 484 would have access to a car at any one point (since those making use of car club spaces would presumably change from week to week). Noting the distances from the proposed development to the various designated sites (as shown at Table 4.1 above), none of the sites are within a typical round-trip walking distance and all would require visitors from the site to have access to a car. These distances and the generally low level of access to cars for residents as a proportion means that the ability to visit the designations will be reduced for new residents of the proposed development when compared to the population as a whole.
- 6.10.16. The qualifying features of the River Wensum SAC and SSSI are to do with the riparian habitat and the species using it, features which are not susceptible to increased visitor pressure from walkers and dog walkers. The challenges associated with the designated site are concerned with water use and pollution. The River Wensum Strategy sets out an approach to encourage greater access to the river as it flows through the city, rather than the SAC section, but in any event any additional

⁶ Natural England (2019). *Monitor of Engagement with the Natural Environment. The national survey on people and the natural environment.*

visitors are not likely to cause a significant adverse effect on the qualifying features of that site.

Quantifying likely effects – increase in dog ownership

- 6.10.17. The issue of the number of additional dogs generated by the proposed development was raised during the previous application. Paragraphs 12.17 to 12.20 of a Supplementary Environmental Information (SEI) document prepared by Icen Projects considered the number of dogs likely to be generated by the proposed Development, and argued that Natural England's then-estimate of 375 additional dogs was too high.
- 6.10.18. The earlier Note of Clarification examined this point in light of published information which remains relevant to the current assessment, and is therefore reiterated below. The SEI document is included with this report as Appendix 8.
- 6.10.19. Natural England's estimate was derived from a study by Murray *et al.* (2010), which indicates that dogs are owned by 31% (not 30%) of UK households. It is important to note that this work makes no distinction between those respondents living in houses and those in flats, and one should therefore be cautious in applying the headline findings to all types of development. Though Murray *et al.* (2010) did not differentiate in this way, they did find that *"households with gardens were more likely to own... dogs than households without gardens"*; that *"the likelihood of dog ownership increased as household size increased"*; and that *"dogs were more likely to be owned by households in a rural environment, probably reflecting the householders' awareness of the need for space to exercise a dog"*.
- 6.10.20. The proposed development is in central Norwich, a highly urban environment, and is to comprise up to 1,100 new dwellings, the majority of which will be apartments, with 11 houses. While the apartments will have access to communal areas and have some private balcony space, these areas will not be private gardens; the 11 houses will have small rear gardens. The findings of the study can therefore be said to support the position that the level of dog ownership in the proposed development will likely be lower than average.
- 6.10.21. The SEI report made the point that it is more appropriate to consider data derived from similar Weston Homes developments. Paragraph 12.18 notes that *"in order for an occupant of a Weston Homes [flatted] development to own a dog and keep it at the property, a licence must be applied for [from the Managing Agents]"*. It was via interrogation of the Managing Agents' records that Weston Homes was able to provide data on pet licences specifically for dogs, granted for occupiers of their flatted developments built over the last 10-year period. The SEI did not explain that this survey *only included schemes where there was at least one licence for a dog*; i.e. any developments of flats where there were no dog licences at all were excluded, to avoid including schemes where dog ownership might be impractical. Thus *only existing flatted developments which were clearly appropriate for dogs* were counted, and this has increased the percentage of units with a dog, albeit to still a very low proportion. These data are reproduced at Appendix 9.

- 6.10.22. As paragraph 12.19 of the SEI report states, the data demonstrates that of a total of 2,333 flats (in schemes with at least one dog present), 35 (1.5%) have a dog licence. The report goes on to estimate the number of additional dogs the proposed Development would be expected to generate, based on an “average percentage” of flats per scheme where residents have a dog licence, taken of all 12 existing dog-owning sites, resulting in 3.68% dog licences per scheme. The number reached in this way, also allowing for three dogs within the nine houses, (based on the Natural England average percentage of household dog ownership of 30%) is 49 additional dogs.
- 6.10.23. Ecology Solutions has considered an alternative approach, since to take the average percentage across the 12 sites (summing the percentage of households in each scheme with dog licences and dividing by the number of schemes) results in the data being skewed by the scheme at Dukes Hall in Hornchurch, which while only a relatively small site at 58 units, has six dog licences, or 10.3%. This particular development is immediately adjacent to an existing park, a location which could be said to be attractive to existing or prospective dog owners.
- 6.10.24. Using the absolute figures avoids this issue, and shows that licences are held by 1.5% of units across all dog-owning sites. On this basis, the proposed development of up to 1,089 flats could be expected to generate 17 dog-owning households, together with the four dogs for the 11 houses (rounding up in each case). This total of 21 is far below Natural England’s suggested 375, and more in line with what might be expected when one considers the detail of Murray *et al.* (2010).
- 6.10.25. Regarding the issue of addressing non-compliance with the pet licensing scheme, Ecology Solutions has been advised by Weston Homes that the requirement to secure a pet licence for dogs has proven to be self-policing. This is because all private leaseholders and the Housing Association operating the affordable units are shareholders of the Management Company which receives reports from the Managing Agents, including in respect of pet licences issued. Other residents of a building are clearly aware of dogs present in the building, and would be likely to report any household that had not been recorded as having a dog pet licence. The Managing Agents have the power to enforce the terms of the lease, with the ultimate sanction of forfeiture of the lease for breach of terms, whilst the Housing Association can take action against non-compliance with its letting contract. In light of this, Weston Homes and the Managing Agents believe that the current records on pet licences for dogs at its schemes are accurate, and thus they can be used to extrapolate the likely dog ownership rate for the proposed Development.
- 6.10.26. Nevertheless, the issue of dog walkers and their potential for adverse effects on interest features of designated sites has of course been given extensive consideration, and has been raised in previous planning decisions, including those heard at appeal.
- 6.10.27. The likelihood of significant adverse recreational effects resulting from proposals with a predominance of flats was an issue in a Planning

Inspectorate decision (APP/X1545/A/09/2105943/NWF) made on 1 December 2009 in relation to a development site in Maldon, Essex. The nature conservation aspects of the case are discussed at paragraphs 43 to 59, with paragraph 54 relating to the potential for recreational disturbance on the Blackwater Estuary SPA / Ramsar / SSSI in the context of flats and a corresponding reduction in the likelihood of dog ownership. In the view of the Inspector, “*while there could be dog owners within the development, this is unlikely to be large given that the accommodation would mostly comprise flats.*”

6.10.28. Overall, taking into account the nature and location of the proposed development, the number of additional dogs generated is likely to be low.

6.11. **Greater Norwich Green Infrastructure Delivery Plan and Review of Alternative Open Spaces**

6.11.1. This section explores the proposed and existing recreation opportunities within the site and the locality, and considers the likely effects arising from the proposed development in light of the numbers of additional residents and dogs it is likely to generate.

Greater Norwich Green Infrastructure Delivery Plan (2009)

6.11.2. The Greater Norwich Green Infrastructure Delivery Plan (GIDP), produced by the Landscape Partnership for the Greater Norwich Growth Board (GNGB) in 2009, identifies a series of Green Infrastructure Priority Areas (GIPAs) in the locality. The GNGB comprises Broadland DC, NCC, South Norfolk Council, Norfolk County Council and New Anglia Local Enterprise Partnership (LEP), and therefore represents a coordinated approach to addressing, inter alia, the impacts of all allocated and proposed development in the JCS area which could affect the European sites identified by Natural England as relevant to this planning application.

6.11.3. Figure 16 within the GIDP illustrates the position of the GIPAs which extend into Norwich, namely *Water City – Rivers Yare and Wensum* and *Norwich to the Broads*, as well as the Urban Green Grid. Paragraph 1.32 of the GIDP defines the Green Grid as (emphasis added):

...a series of spaces within the urban areas of Norwich which are currently undeveloped and where there is potential for enhancement and linkage. The Green Grid is in addition to the network of existing designated parks, open spaces and wildlife sites and includes e.g. areas of undeveloped brownfield land, verges, and amenity areas.

6.11.4. Opportunities for enhancement of the GIPAs in terms of their landscape, biodiversity, geodiversity, access, open spaces and cultural heritage are identified. The *Water City* and *Norwich to the Broads* GIPAs are directly relevant to the provision of alternative recreation resources within Norwich that would be available to new residents of the proposed Development, as well as residents of schemes on other approved, allocated and emerging sites.

Greater Norwich Infrastructure Plan 2018

6.11.5. The GNGB publishes the Greater Norwich Infrastructure Plan (GNIP), the purpose of which is to help “*coordinate and manage the delivery of strategic infrastructure to support growth, a high quality of life and an enhanced natural environment*” across the Greater Norwich area (see paragraph 1.3 of the document). It supports the delivery of the Greater Norwich Joint Core Strategy and other Local Plan documents for the area, as well as other planning instruments, and is updated annually. A copy of the GNIP 2018 is included at Appendix 10.

6.11.6. The GNIP takes forward the principles of the GDP, and includes costed measures for particular green infrastructure projects in Norwich and the wider area. Paragraphs 3.1 and 3.2 are as follows (emphasis added):

A Green Infrastructure Delivery Plan was produced in 2009 focusing on the two main geographical areas identified for significant development: South West and North East Norwich. It identifies a number of schemes or projects to contribute to the protection and enhancement of the strategic green infrastructure network and continues to inform delivery

However, the understanding of need and prioritisation is always under revision and as information becomes available, projects are refined and reprioritised. The projects in the Greater Norwich Infrastructure Plan are based on the need to mitigate the potential impacts on Natura 2000 sites under the Habitat Regulations and an understanding of the timing of development served by the identified green infrastructure corridors.

6.11.7. Table 3 within the GNIP 2018 sets out the significant development sites for early delivery in Norwich. The proposed Development at Anglia Square is included in this table. It is therefore clear that the proposed Development is included and accounted for in the scope of GNIP 2018. Natural England’s first consultation response on 4 May 2018 predated the GNIP 2018 publication.

6.11.8. The document includes a table of approved and forthcoming green infrastructure projects across the Greater Norwich area. Projects promoted in the Draft five year Investment Plan for Delivery in 2017/18 are as follows:

Norwich

- Riverside walk accessibility improvements (Norwich-Wensum Parkway GIPA)
- Sloughbottom Park to Anderson’s Meadow section improvements (Marriott’s Way GIPA)
- Barn Road Gateway (Marriott’s Road GIPA)
- Riverside walk: Fye Bridge to Whitefriars (Norwich-Wensum Parkway GIPA)

Broadland

- Thorpe Ridge – protection and enhancement of woodlands and provision of public access (Thorpe Ridge to The Broads via North Burlingham GIPA)

- Thorpe Marriott to Costessey (Marriott's Road GIPA)
- Strumpshaw Pit Circular Walk (East Broadland GIPA)
- Broadland Way – Green Lane North to Plumstead Road (Norwich to the Broads GIPA)

South Norfolk

- Improved Connectivity – Costessey Circular Walks (Marriott's Road GIPA)
- Cringleford N & N Strategic Connections (Norwich Fringe South GIPA)
- Wymondham – Protection and enhancement of the Lizard and Silfield Nature Reserve (Wymondham GIPA)

6.11.9. These projects have all been allocated secured funding for delivery in 2017/18 or 2018/19. They will therefore be in place by the time of occupation of the proposed development. They represent a wide range of projects to cover a large catchment area and offer a variety of interest features.

6.11.10. A series of further projects is proposed for delivery in future years, both within Norwich and the surrounding area. The GNIP includes at Section 2 – *Funding sources and delivery planning* the relevant details, with reference to, inter alia, the City Deal £440m infrastructure investment programme developed from the JCS Infrastructure Framework, and to CIL funding, the Local Growth Fund, business rates and the New Homes Bonus, with pooled funding and governance arrangements to manage timely delivery of the programme, so as to accelerate planned growth.

6.11.11. Taken together the measures set out in the GDP 2018 will provide a wide range of opportunities for recreation for new residents of the Site, as well as existing residents of the Greater Norwich area, and those to be accommodated on other schemes already approved or allocated in the JCS or proposed in the emerging Greater Norwich Local Plan (GNLP). These are in addition to the resources that will be provided within the Site as part of the proposed Development and already present in the locality. These are considered below.

On-site Open Space and Recreation Opportunities

6.11.12. The proposed Development is predicted to generate some 2,068 new residents. Paragraphs 4.190 to 4.195 of the Socio-economic Chapter of the ES highlight that the scheme will be well served by a combination of on-site and existing off-site spaces. The relevant passages are reproduced below for ease of reference (emphasis added):

As outlined in the baseline, there are a wide range of open spaces available within close proximity to the site and overall Norwich does not have a deficit of open space provision. It is anticipated that Waterloo Park, Sewell Park and Mousehold Heath will cater for the new residents' needs to some extent.

The scale and city centre location of the Proposed Development does not allow for large amounts of open space to be incorporated within the

scheme. However, the design does provide for a significant amount of residents' communal open spaces and also public open spaces within a high quality public realm, in order to enhance the Site amenity and contribute to the open space needs of residents.

The Proposed Development will provide shared residential amenity space on accessible roof gardens with private amenity space in the form of balconies or terraces. In addition to the communal amenity space and private amenity space, the Proposed Development will provide 1.6 hectares (4 acres) of public open space in the form of public routes and squares. This represents a significant net increase over existing levels of open space provided at Anglia Square. This provision will enhance the local open space offer and will encourage social interaction and cohesion between new and existing local communities, providing a valuable recreational resource for the local residents and the residents of the Local Impact Area more widely.

...

Taking account of the quantum of private and public open space and the significant public realm improvements the Proposed Development will deliver as well as the accessibility of playspace, open space and sports facilities in the area, the impact on open-space, sport and recreation is considered to be permanent, minor, beneficial across the Local Impact Area.

- 6.11.13. Hence the ES found that there would be a benefit in terms of open space provision.
- 6.11.14. The Site is close to the opportunity corridor shown on Figure 16 in the GDP, and more specifically the 'stepping stones' identified in Figure 1 of Appendix to the document; it will play a significant role in delivering the Green Grid through the North City area, in keeping with the aims and objectives of the GDP.
- 6.11.15. A Homeowner's Information Pack would be provided to new residents; this would provide information on resources within the development, as well as opportunities in the immediate area, which are considered in further detail later in this section.
- 6.11.16. It is recognised, however, that while these on-site spaces would likely be used for casual everyday recreation, they may not be suitable for dog walking or walking as a leisure activity. More readily available opportunities for dog-walking, as well as more extensive resources for general recreation are available in the immediate area and a short distance from the site. These are considered below.

Existing Recreation Opportunities in Proximity to the Site

- 6.11.17. Several existing recreation opportunities are present in the locality; these are considered below and illustrated on Plan ECO2.

River Wensum Strategy (2018)

- 6.11.18. The River Wensum Strategy was produced by the River Wensum Strategy Partnership (RWSP), which consists of Norwich City Council,

the Broads Authority, Norfolk County Council (also representing the Greater Norwich Growth Board), the Environment Agency, and the Wensum River Parkway Partnership (a voluntary body also representing the Norwich Society and key river stakeholders).

6.11.19. The strategy, adopted in 2018, covers the stretch of the river from Hellesdon in the west to Whitlingham Country Park in the east. The SAC designation begins a little further west of Hellesdon. The strategy aims to facilitate change and regeneration along the river corridor and defines a series of objectives, which include:

- improving the management of the river corridor and its surroundings for the benefit of the city, residents of the wider Norwich area, and visitors;
- increasing access to, and use of, the area by all, including enhanced connectivity with the Norfolk Trails network;
- enhancing the natural environment, including water quality, biodiversity and green infrastructure; and
- enhancing the city's environmental, cultural and historic offer in a manner which maximises the attractiveness of the area as a location to do business.

6.11.20. Key proposals to benefit the natural environment include:

- Improvements to water quality in specific stretches of the river;
- Protection and enhancement of biodiversity of the river and riverbanks including proposals for floating vegetation platforms; a biodiversity enhancement and invasive species management plan to manage non-native species; and an eel pass at New Mills to assist with migration; and
- Improvements to open spaces adjacent to the river to maximise their use for leisure and recreation as well as enhancing biodiversity and heritage features where appropriate.

6.11.21. The intended benefits of the strategy include:

- Increased access to the river corridor and an enhanced public realm for the benefit of residents, businesses and visitors;
- Improved green infrastructure to support the delivery of major housing growth planned for the city centre and east Norwich areas;
- Providing health and recreational benefits for the existing communities adjacent to the river; and
- Improved natural environment and biodiversity in the river corridor, acting as a green lung in the heart of the city.

6.11.22. Several policies have been developed under the strategy. Those of relevance to the current assessment are as follows:

Policy 2: Key missing sections of the Riverside Walk between New Mills and Trowse Swing Bridge will be completed during the strategy period (by 2028). Opportunities will also be taken to complete the missing section of Riverside Walk out to Whitlingham Country Park, and the

missing sections upstream of New Mills during the strategy period, where practicable and feasible.

Policy 12: The biodiversity value of the River Wensum corridor will be protected and enhanced, and opportunities will be taken to improve its habitat.

Policy 15: Opportunities will be sought to enhance and increase green infrastructure and areas of open space within the river corridor.

- 6.11.23. Paragraph 6.31 notes that *“the River Wensum provides the largest area of continuous open space within the city”*. Paragraph 6.35 continues:

The river already possesses several areas that afford quiet and more naturalised spaces, such as along the Marriott’s Way approaching Hellesdon Mill, including the Marlpit Paddocks, Anderson’s Meadow, Train Wood, and around the Cow Tower. Whitlingham Country Park and the historic Wensum Park also provide open space along the river corridor. As many of these areas are designated as County Wildlife Sites, Local Nature Reserves or public parks they represent the best opportunities to develop a recognised series of long term open spaces that support wildlife and people’s use of the river.

- 6.11.24. The strategy for the River Wensum is therefore at the forefront of providing improved open space for the city, and includes several measures to promote greater public access as well as ecological benefits. As the HRA of the Greater Norwich Local Plan has noted, the area offers an alternative to the recreation opportunities afforded by the SPA sites, an alternative that is easily accessible to many existing residents, as well as the new residents of the proposed development and other current and future residential schemes in the JCS area. This is considered below in light of the opportunities already offered.

Access to the River Wensum

- 6.11.25. Parts of the River Wensum not designated as SAC are within easy reach of the proposed development. The area of Wensum Park and Environs east of Mile Cross Road and west of Oak Street measures some 11.1ha. The closest access point is approximately 300m west of the Site via St Crispins Road, some six minutes’ walk; the Wensum Park side is accessible via Gildencroft and Oak Street, some 730m or approximately 12 minutes’ walk⁷. A circular walk taking in Wensum Park, Train Wood, Anderson’s Meadow, Marriott’s Way and both sides of the river is possible. It is possible to extend the walk further along the river to the west of Mile Cross Road.

- 6.11.26. The Friends of Train Wood website⁸ refers to the recreation opportunities available as follows:

The site includes the start of the Marriott’s Way, part of the national cycle network running through Norwich, a great 26 mile off road route for walkers and cyclists which goes all the way to Aylsham, is a Norfolk Trail

⁷ Area measurements, distances and approximate walking and driving times taken from MAGIC and Google Maps.

⁸ <http://trainwood.co.uk/access-and-cycling/>.

and part of Sustrans National Cycle Way No 1 as well as being a bridleway and wheelchair accessible. In addition there are several kilometres of riverside and woodland paths, including boardwalk, in the woods.

- 6.11.27. Overall, this is a high quality recreation resource suitable for both walking and dog walking within a short walk of the Site. It is clear that it is a priority for enhancement to encourage greater access, and new residents of the proposed Development would be well placed to take advantage of the opportunities presented.

Gildencroft

- 6.11.28. A small park of some 0.5ha is present at Gildencroft, approximately 65m to the west of the Site. Though small and perhaps unsuitable for longer walks, it would clearly be attractive for exercising dogs on a daily basis or when time is short. It also contains a large children's play area, which would conveniently meet a requirement from residents of the development to exercise with their children.

Waterloo Park

- 6.11.29. Waterloo Park is listed on borrowmydoggy.com⁹ as a place to walk a dog in Norwich. The website describes the site in the following terms:

Situated in the north of the city, Waterloo Park is a Grade II listed park and is included in the English Heritage Register of Parks and Gardens of Special Historic Interest. There are 19 acres of land, which means there's plenty of ground for you and your dog to cover together.

- 6.11.30. On foot, Waterloo Park is approximately 16 minutes (1km) via Magpie Road, Starling St and Angel Road. It is seven minutes by car.

Chapelfield Gardens

- 6.11.31. Chapelfield Gardens is listed on the same website, where it is described as follows:

You can find Chapelfield Gardens in the city centre, alongside the shopping centre Intu Chapelfield. The park is a popular destination for people of all ages and an excellent dog walking spot in the heart of the city. It's also the perfect spot for a picnic if you want to relax with your pup on a nice day.

- 6.11.32. It is approximately 1.4km via Colegate and the city centre, some 20 minutes' walking. It would be possible to drive to the Chapelfield shopping centre car park, but this seems an unlikely driving destination.

Sewell Park

- 6.11.33. An area of amenity grassland, mature trees and shrubs, Sewell Park is noted as a safe place to let dogs off the lead¹⁰. It is approximately 1km or 13 minutes' walk north of the Site via Magdalen Street.

⁹ <https://www.borrowmydoggy.com/doggylopedia/fun-things-to-do-with-your-dog/dog-walks-norwich>.

¹⁰ Previously cited at <http://www.scentabarks.co.uk/dog-walking-routes-around-norwich>, this link is no longer available online.

Kett's Heights

- 6.11.34. Kett's Heights is a steeply wooded area containing the remains of a medieval chapel, 19th century garden terraces and a viewpoint overlooking Norwich. In 2015 the Friends of Kett's Heights was established with the aim of restoring the site so that it is once more a welcoming and attractive space for the local community and visitors to Norwich. Trees have been cleared to re-establish the view, and to restore the community orchard, paths and meadow. According to the website¹¹, dogs are very welcome at Kett's Heights.
- 6.11.35. Kett's Heights is some 1.5km or 20 minutes on foot from the Site, along Barrack Street, or via Blackfriars Street and along the northern side of the river for a similar distance and time. On-street parking is available in Spitalfields, some 1.2km or six minutes' drive.

Mousehold Heath Local Nature Reserve (LNR)

- 6.11.36. An area of some 88ha, Mousehold Heath LNR is described on Natural England's website as:

A remnant of a once more extensive heathland. The site has a mixture of oak / birch woodland, scrub, acid grassland and remnant heath. Large seasonal pond. Bell heather, ling, broom and common, western and dwarf gorse in the heathland. A good variety of insect life and common lizards. Wooded areas have a variety of birds including greater-spotted woodpecker, sparrowhawk and song thrush.

- 6.11.37. The website visitnorfolk.co.uk¹² considers it to be one of the county's most dog-friendly parks, with *"180 acres of undulating woodland and heath with waymarked routes and beautiful views of the Norwich skyline, dominated by the cathedral"*.
- 6.11.38. Natural England's website says that it is *"within easy walking / cycling distance of Norwich city centre"*. The walk to Mousehold Heath from the Site is approximately 1.5km and takes 22 minutes on foot via Cowgate, Silver Road and Mousehold Avenue. By car the journey is seven minutes from the Site to Mousehold Heath public car park on Gurney Road.
- 6.11.39. Mousehold Heath provides a very good option for walking dogs off the lead in close proximity to the city centre, providing a good experience of semi-natural habitat. It is much closer to the Site than the European designated sites considered in this assessment.

Whitlingham Country Park

- 6.11.40. Also listed on visitnorfolk.co.uk, Whitlingham Country Park is southeast of the city. It is described as:

¹¹ <https://www.kettsheights.co.uk/location.html>.

¹² <https://www.visitnorfolk.co.uk/post/dog-friendly-parks-and-woods-in-norfolk>.

The Broad within the city, stretching out along the southern bank of the river Yare. One of the city's most popular attractions, it has a circular route around the lake that takes in meadows, woodlands and wetlands, with plenty of opportunities to detour off into the countryside.

- 6.11.41. Whitlingham Marsh, Whitlingham LNR and Whitlingham LNR are two separate but neighbouring designations covering the country park.
- 6.11.42. Whitlingham Country Park and Visitor Centre is approximately 5.8km by car (some 17 minutes) from the Site. It is a walk of some 4.5km lasting 55 minutes, much of which is on the road, so it seems an unlikely walking destination. It is noted, however, that the River Wensum Strategy refers to providing better access to the country park via the river, though this appears to be a long term aim.
- 6.11.43. Whitlingham Country Park is noted in Panter *et al.* (2016) as a site which "is well connected to the city and is likely to draw visitors that might otherwise go to the Broads".

Catton Park

- 6.11.44. Catton Park is some 2.9km or nine minutes' drive from the Site to the car park, or alternatively 2.7km and approximately 34 minutes on foot. It is a large country park of 28ha of parkland, woods and meadows with a series of marked trails, where dogs can be let off the lead.

Summary

- 6.11.45. Overall it is clear that there is already significant provision of public open space, varied in character and including semi-natural environments, within easy walking distance or a short car journey from the Site, which is suitable for the purposes of dog walking and walking. New residents of the proposed development will be well-placed to take advantage of these existing opportunities.

6.12. Visitor Surveys at European Sites in Norfolk

- 6.12.1. A series of visitor surveys was undertaken across the European designated sites in Norfolk during 2015, with the report published in early 2017 (Panter *et al.*, 2016). The work was based on passive observation (tallies) as well as interviews with visitors.
- 6.12.2. Key findings of the report include that for the sites surveyed (which include the Broads Sites, the East Coast Sites, the North Coast Sites and Norfolk Valley Fens, but not River Wensum SAC) there would be a predicted increase of 14% in access by Norfolk residents as a result of new housing during the current plan period. As might be expected, there was a difference across the sites, but for the Broads alone the figure was also a 14% increase, for the East Coast sites the figure was 11%, for the North Coast Sites 9%, and for the Valley Fens 28%.
- 6.12.3. Table 1 on page 11 of the Panter *et al.* (2016) report summarises the potential general impacts from recreation to European site interest

features. Information relevant to this assessment is reproduced in the table below:

Area	Designations	Disturbance to breeding birds	Disturbance to wintering / passage birds	Disturbance to non-avian interest	Trampling / erosion	Increased fire risk	Eutrophication	Contamination
Broads Sites	The Broads SAC Broadland SPA Broadland Ramsar	X	X		X		X	X
East Coast Sites	Winterton-Horsey Dunes SAC Great Yarmouth and North Denes SPA	X	X		X	X	X	X
	Breydon Water SPA	X	X					
North Coast Sites	North Norfolk Coast SAC North Norfolk Coast SPA North Norfolk Coast Ramsar The Wash and North Norfolk Coast SAC The Wash SPA The Wash Ramsar	X	X	X	X		X	X
Norfolk Valley Fens	Norfolk Valley Fens SAC				X	X	X	X

Table 6.1. Summary of potential general impacts from recreation on European Site interest features. Reproduced from Table 1 of Panter *et al.* (2016).

6.12.4. Paragraph 3.7 of the report states that “*survey points within the Broads usually had a very low proportion of dogs recorded from tallies, just 6%*”. Table 6 on page 31 notes that 30 of 181 people interviewed at the Broads were dog walkers, or 17%. For the East Coast Sites the figure was 40% (72 of 180 people); for the North Coast Sites, 43% (212 of 493); and the Valley Fens, 53% (29 of 54).

6.12.5. Paragraph 3.13 considers whether dogs were seen to be on or off-lead, an important consideration since dogs off-lead tend to cause a greater disturbance to wildlife (emphasis added):

...The numbers of dogs in a group that were on lead and off lead were compared as proportions for each group. Although this is only of the dogs on lead / off lead status when at the survey point, it can often be indicative of the general use in the site too.... The proportion of dogs on lead was greatest in the Broads (average group proportion; 86% on lead), where dog presence was typically low anyway.

6.12.6. Paragraphs 3.20 and 3.21 consider the most popular leisure activities at each of the designated sites surveyed (emphasis added):

Overall, the most commonly reported activity was dog walking, with 549 interviewed groups conducting this activity, representing 41% of interviewees. The second most common activity was walking (26%). Within individual areas this first and second ranking of dog walking and walking was consistent for the East Coast, Roydon & Dersingham, the Valley Fens, the Wash and the N. Coast... In these five areas, dog walkers

and walkers typically accounted for just under three quarters of interviewees.

Only in the Broads and Brecks were these first and second rankings different. In the Brecks dog walking remained highest (48% of interviewees). But the number of interviewees conducting “other exercise / recreation” (typically cycling...) was ranked second (24%). The relative proportion of activities conducted in the Broads was particularly different from all other areas. The majority of visitors described their activity as wildlife watching or viewing the scenery (29%). While roughly similar proportions of visitors were either walkers (21%) or conducting some boating activities (22%, this includes those on organised boat trips).

- 6.12.7. Table 10 on page 39 sets out the percentage of interviewees citing their main reason for visiting each of the areas surveyed. Reasons associated with dog-walking were ‘Good for dog’, ‘Can let dog off’ and ‘Closest place for dog’. Table 6.2 below reproduces the results in relation to the designated sites under consideration.

	Broads Sites	East Coast Sites	North Coast Sites	Valley Fens
Good for dog	0%	5.1%	3.1%	5%
Can let dog off	0%	0.6%	0.8%	5%
Closest place for dog	1.8%	1.9%	1.1%	0%

Table 6.2. Percentage of interviewees citing their main reason for visiting each of the areas, for reasons associated with dog-walking. Reproduced from Table 10 of Panter *et al.* (2016).

- 6.12.8. Overall, the results of the survey indicate that the Broads is not seen as primarily an attractive destination for walking dogs. Although figures are somewhat higher for the designated sites in other areas, dog-related reasons for visiting are not regularly cited.

6.13. HRA of published Proposed Submission Greater Norwich Local Plan

- 6.13.1. A Habitats Regulations Assessment of the Greater Norwich Local Plan was published by The Landscape Partnership in July 2021. It considers the effects of the Local Plan over the plan period to 2036 on European sites, and its findings are relevant to the current assessment.

- 6.13.2. Section 4 of the report considers the European sites potentially affected by recreational impacts. Regarding the River Wensum SAC, it finds that:

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.

- 6.13.3. Other sites are characterised as being potentially affected by recreational impacts. For Norfolk Valley Fens SAC, the assessment states (emphasis added):

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.

- 6.13.4. For Broadland SPA / Ramsar / The Broads SAC the view is that (emphasis added):

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. 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.

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.

- 6.13.5. For Breydon Water SPA / Ramsar (emphasis added):

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.

- 6.13.6. For 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.

6.13.7. For 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.

6.13.8. For 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.

6.13.9. For 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. The median distance travelled from home varies from 2km to 29km for most parts of this site, with Morston (S) having a median distance of 41km but visitor rates are very low for residents beyond 14km.

6.14. HRA of the Strategy for Sustainable Tourism in the Broads

6.14.1. In considering the effect of additional visitors to the Broads, the work by Liley *et al.* (2016)¹³ is relevant. This work comprised a Habitats Regulations Assessment of the Strategy for Sustainable Tourism in The Broads. It considered the effects of tourism (including boating, walking and cycling) on European designations, including (but not limited to) Broadland SPA, Broadland Ramsar and The Broads SAC.

6.14.2. Paragraph 3.21 of the HRA considers the potential for effects arising from increased walking (including dog walking) and cycling; these include disturbance to birds (including from dogs off leads), trampling and nutrient enrichment.

6.14.3. Paragraph 3.22 refers to the potential for these activities to affect sensitive areas:

In general most areas of important wildlife habitat are not easily accessible by bicycle or on foot, and many of the best locations for walking are nature reserves where screening, hides, marked routes, warden presence etc. contain any impacts.

6.14.4. The report goes on to review various measures and revisions that have been adopted following consideration of an earlier iteration of the strategy, with paragraph 4.3 concluding that:

¹³ Liley, D., Lake, S. & Panter, C. (2016). *Habitats Regulations Assessment (HRA) of the Strategy for Sustainable Tourism in the Broads 2016-2020*. Report by Footprint Ecology for the Broads Authority.

...the Broads Sustainable Tourism Strategy is fully compliant with the requirements of the Habitats Regulations and European Habitats and Birds Directives, having ensured that the plan contains the necessary measures to avoid likely significant effects on European sites.

- 6.14.5. The strategy being implemented is therefore considered to address the effects of recreation on the designations, and it is stressed that the most sensitive areas are not generally accessible.

6.15. New and Existing Recreation Opportunities

- 6.15.1. As the information above has shown, new residents of the site will have access to a wide range of potential resources for recreation. These include communal landscaped areas for residents and public area play trail features within the Site, linking into the Urban Green Grid of the North City; existing parks within walking distance, or else a short drive; and those new projects across Norwich and the wider area for which funding has been secured under the GNIP 2018.

- 6.15.2. The GNIP makes it clear that these projects are *“based on the need to mitigate the potential impacts on Natura 2000 sites under the Habitat Regulations and an understanding of the timing of development”*. The proposed Development is specifically cited in the GNIP 2018, so it is clear consideration of new residents of the scheme in addition to other sites has been included in the scope of the measures to be delivered.

Tottenham Hale Centre

- 6.15.3. Ecology Solutions was involved with a similar scheme in the London Borough of Haringey, at Tottenham Hale. This scheme, which includes up to 1,036 residential units (a similar scale to the proposal under consideration), is in the vicinity of Lee Valley SPA. Natural England's advice, as set out in their letter of 5 September 2018, is that (emphasis added):

Based on the plans submitted, Natural England considers that the proposed development will not have likely significant effects on the Lee Valley Special Protection Area and has no objection to the proposed development.

To meet the requirements of the Habitats Regulations, we advise you to record your decision that a likely significant effect can be ruled out. The following may provide a suitable justification for that decision:

- **The use of green spaces such as Down Lane Park to the north of the development as an alternative to Walthamstow Wetlands will minimise the potential for increased visitor pressure at Lee Valley SPA. We do, however, recommend you acknowledge any evidence that comes forward relating to increasing visitor pressures at Lee Valley SPA in the near future.**

- 6.15.4. It is clear then that it is acceptable to consider the presence of existing recreational resources in the context of the likelihood of a proposal to have a significant effect on a European site. In the case at Tottenham Hale, Lee Valley SPA is approximately 0.5km from the site of the proposed development, well within walking distance. The designated

sites under consideration in this assessment are not within reasonable walking distance of the Site, and in the case of Norwich, additional resources are being provided also, as set out above.

6.16. Water Quality

6.16.1. Natural England's letter of 15 July 2022 at Appendix 1 sets out the position in terms of adverse effects of water quality on designated sites, that in the absence of avoidance / mitigation measures, the proposed Development would be likely to result in additional nutrients being delivered to the River Wensum SAC, the Broads SAC and Broadland Ramsar. It was considered that improvements by water companies would not be sufficient to address the issue and that further mitigation measures would be required.

6.16.2. The advice letter at Appendix 2 sets out the rationale for the position adopted by Natural England in early 2022:

In freshwater habitats and estuaries, poor water quality due to nutrient enrichment from elevated nitrogen and phosphorus levels is one of the primary reasons for habitats sites being in unfavourable condition. Excessive levels of nutrients can cause the rapid growth of certain plants through the process of eutrophication. The effects of this look different depending on the habitat, however in each case, there is a loss of biodiversity, leading to sites being in 'unfavourable condition'. To achieve the necessary improvements in water quality, it is becoming increasingly evident that in many cases substantial reductions in nutrients are needed. In addition, for habitats sites that are unfavourable due to nutrients, and where there is considerable development pressure, mitigation solutions are likely to be needed to enable new development to proceed without causing further harm.

In light of this serious nutrient issue, Natural England has recently reviewed its advice on the impact of nutrients on habitats sites which are already in unfavourable condition. Natural England is now advising that there is a risk of significant effects in more cases where habitats sites are in unfavourable condition due to exceeded nutrient thresholds. More plans and projects are therefore likely to proceed to appropriate assessment.

6.16.3. The Nutrient Budget Calculator at Appendix 11 shows that the projected total Phosphorus budget for the site is 88.73 kg/year and the total Nitrogen budget is 2498.00 kg/year. Post-2030, the values would be 21.57 and 906.12 kg/year respectively.

6.16.4. Paragraph 10 of the NCC Interim Policy on Nutrient Neutrality at Appendix 12 notes the following:

The Norfolk wide calculator has been produced in collaboration with Natural England. The Norfolk nutrient budget calculator is a catchment specific tool which has been varied to take into account regional variances from the Natural England calculator and is designed to rapidly calculate the nutrient loading from new residential development in the catchments of the River Wensum SAC and the Broads SAC. The Norfolk calculator utilises the best available scientific evidence and research alongside the latest nutrient neutrality guidance from Natural England (2022). As a result, some of the calculator inputs and assumptions deviate

from those advised in the published guidance but there is a detailed guidance report to evidence the assumptions in the calculator.

6.16.5. Paragraph 11 continues:

Natural England has written confirming that it “note[s] that the approach adopted in the Norfolk calculator is broadly consistent with that which underpins the Natural England nutrient budget calculator” but with detailed comments on areas where there are differences including occupancy rates, water usage and Waste water Treatment Works (WwTW) discharge rates. In respect of these three areas Natural England advises that the Norfolk Authorities, as competent authorities must be satisfied that the evidence underpinning the assumptions in the Norfolk calculator is sufficiently robust and appropriate and advise that the Norfolk calculator is less precautionary than that of Natural England, but that ultimately “Natural England do not intend to raise objection to the Norfolk Authorities using the Norfolk calculator to inform their Appropriate Assessments”. Officers are of the view that the Norfolk calculator is sufficiently robust to justify the grant of planning permission and it therefore opens up the prospect of being able to determine currently stalled planning permissions where developers are able to demonstrate the level of mitigation required by the calculator. Officers are aware that across the affected catchment area several developers are exploring progressing planning applications by delivering on-site mitigation measures delivering the benefits required by the calculator. Whilst this may justify the release of some planning consents across the catchment, large strategic urban schemes are unlikely to be able to provide sufficient mitigation on-site.

6.16.6. In the absence of avoidance and mitigation measures the proposed Development would be likely to contribute to an increased nutrient load on the named designations. It is therefore necessary to proceed to give further consideration to these measures at the Appropriate Assessment stage.

6.16.7. It is noted that in the letter of 7 October 2022 (see Appendix 5) Natural England referred to the Norfolk calculator as “less precautionary” in terms of its occupancy and water usage rates when compared to the standard Natural England calculator. In the case of Anglia Square, the scheme is predominantly one and two bedroom flats, with no garden taps, low flush toilets, etc. and these characteristics justify more realistic and less precautionary assumptions within the calculator.

6.17. Summary

6.17.1. In summary, the proposed Development is not likely to produce a large number of additional dogs: about 21 dogs is the figure predicted by the data, though as the research cited by Natural England found, dogs are less likely to be kept in small households without gardens in an urban environment, a position recognised in past decisions, so this figure could be an overestimate.

6.17.2. None of the European designated sites (excluding the River Wensum SAC) are within walking distance of the Site, and therefore a car journey would be required to visit, particularly with a dog. This will increase the

attractiveness of the alternative open spaces which are closer to the Site.

- 6.17.3. New opportunities for recreation are to be provided within the Site, proposals which tie into the wider Urban Green Grid and Green Infrastructure Delivery Plan for Norwich.
- 6.17.4. A range of suitable dog walking and walking options is available within walking distance of the Site, in addition to the opportunities offered by the landscape strategy on-site. These range from a small park to longer walks along the River Wensum. Whitlingham Country Park is a short distance away, and is said to attract visitors that might otherwise go to the Broads. Mousehold Heath, which is within reasonable walking distance or else a short drive, is a large area of heathland and woods. Catton Park, an attractive area of parkland, woods and meadows where dogs are welcome, is similarly a short drive or reasonable walk. Both Whitlingham and Mousehold are promoted as dog walking destinations; the River Wensum is subject to a strategy to promote access and use, as well as ecological benefits.
- 6.17.5. A series of green infrastructure enhancements is set out in the GNIP 2018, including works across the city and wider area. These are planned and funded measures, which will be in place by the time of occupation of the proposed Development. The proposed Development is cited in the document, and it is clear that the measures are intended to address the potential significant cumulative effects of approved, proposed and potential development on the European sites.
- 6.17.6. The qualifying features of the River Wensum SAC are not likely to be adversely affected by any increase in recreational use by walkers or dog walkers; the challenges are do with issues of water pollution primarily.
- 6.17.7. Visitor surveys undertaken have shown that the Broads (which includes Broadland SPA / Ramsar and the Broads) is not viewed primarily as a destination for dog walking or walking, rather it is for wildlife watching or scenery that the majority of people visit. Only 6% of visitors were seen to have dogs in passive observations; 86% of those with dogs kept them on a lead. When on a lead, a dog is much less likely to cause disturbance.
- 6.17.8. Much of the area of the Broads is open water that is not used by walkers and is largely inaccessible to dogs. By definition, walkers and their dogs will generally remain on footpaths and other defined rights of way.
- 6.17.9. The position that the most important wildlife habitats in the Broads are not easily accessible on foot is supported by the HRA of the Strategy for Sustainable Tourism, which concluded that significant effects on European sites would be avoided.
- 6.17.10. Overall then, for the walkers and small number of additional dogs likely to be generated by this scheme, most are likely to take advantage of existing recreation resources in the locality and the new and enhanced opportunities provided under the GNIP 2018 for their regular requirements, where these are not satisfied by on-site provision. Some

walkers and dog walkers may not have access to a car, but for those that do, a series of suitable and attractive opportunities (including those promoted by local dog walking interest groups) are within a short distance of the Site. For those that wish to visit the River Wensum SAC, the qualifying features for that site will not be adversely affected by increased recreation, and the River Wensum Strategy will also help to draw visitors away from sensitive areas.

- 6.17.11. Notwithstanding all these points, however, Natural England's view as expressed in its letter of 23 September 2022 is that *"it is not possible to conclude that the proposal is unlikely to result in significant effects alone on the European site(s) in question. Natural England advises that the assessment currently does not provide enough information and/or certainty to justify the assessment conclusion"*. In light of this position, the Applicant has provided further information following Natural England's advice on in terms of on- and off-site greenspace. These additional measures are considered in the following section.
- 6.17.12. There remains the potential for the proposed development to contribute to an in-combination effect, when considered alongside other plans and projects. Accordingly, further consideration is given to this in the following section.
- 6.17.13. If not subject to mitigation measures, the proposed Development would be likely to give rise to significant adverse effects on the designated sites by means of effects on water quality. Measures to address this are given due consideration in the following section.

7. APPROPRIATE ASSESSMENT AND MITIGATION / AVOIDANCE MEASURES

7.1. With regard to recreational disturbance, notwithstanding the existing opportunities in the locality, Natural England's view is that, in the absence of additional avoidance / mitigation measures, the proposed Development is likely to give rise to significant effects when considered alone or in combination with other plans or projects. Similarly, in the absence of avoidance / mitigation measures, significant effects would be likely in terms of water quality.

7.2. Hence further detailed assessment is presented below.

7.3. Further Assessment of Recreational Effects

7.3.1. In line with the *People Over Wind* judgment, avoidance and mitigation measures can only be taken into account at the Appropriate Assessment stage.

Effects when considered Alone

7.3.2. Responding to advice with respect to on-site greenspace in Natural England's letter of 23 September 2022, the Applicant and project team looked again at the landscape strategy for the Site, to assess whether additional features for green infrastructure could be provided, and moreover to promote the concept of recreational walking within the site.

7.3.3. Weston Homes has produced a resource to be provided to all new residents advising on the opportunities for recreation within the Site and the locality. This document, *Anglia Square: Open Space & Recreational Routes Info for Residents*, is included as Appendix 13 to this report.

7.3.4. Page 4 of the document details the areas of open space available, with summary text as follows:

Although the Anglia Square development is within the city centre, more than half of the site is landscaped, open space or public realm, enhancing biodiversity and amenity for residents. The table and plan to the right provides a summary of these spaces.

At ground level there are two large open spaces, St Georges Gardens and Anglia Square, a series of smaller landscaped courtyards and streets lined with trees and planting, which can be linked together to form a short pleasant walk within the site. There are controlled crossings (pelican / toucan / zebra crossings) to cross the roads along the edge of the site providing opportunity to extend walk or cycle into the surrounding area.

Above ground majority of the buildings have podium gardens and roof terraces residents of the apartment block can use and look out onto, in addition to green roofs for biodiversity.

7.3.5. Page 5 is a plan of the open spaces, which p6 gives street scene visualisations of the various areas that will be available. Page 7 illustrates the walk within the site noted in the text above, providing a loop of some 550m lasting approximately seven minutes if walked continuously, but with several opportunities to pause and relax en route.

- 7.3.6. Page 8 sets out images of communal podium gardens and roof terraces providing opportunities on the doorstep for residents.
- 7.3.7. In terms of the Urban Greening Factor (UGF), which, it should be noted, is not a planning policy requirement, the revised landscape scheme achieves a score of 0.35 (see Rev C UGF plan in Appendix 14), which is an uplift of 0.07 UGF score compared to the previous landscaping plans (UGF score 0.28, see Rev A UGF plan in Appendix 14) and is considered more than reasonable; indeed it is 0.4 to one significant figure. These Rev C amendments to landscaping introduced an additional 21 trees and 1,224sqm of greenspace. Moreover the scheme achieves a Biodiversity Net Gain in habitat units of 84.78% and in hedgerow units of 3280.11%.
- 7.3.8. Hence there is provision of new high quality areas for recreation within the site, giving residents easy access. The Applicant is content to accept a planning condition to secure ongoing management and monitoring of these open spaces within the Site.
- 7.3.9. In their letter *“Natural England recognises the constraints in providing large areas of open green space within the development itself. Therefore, provision and enhancement of, and access to, GI off-site should also be considered.”* This is the approach taken by the Applicant, in conjunction with NCC.
- 7.3.10. Page 10 onwards of the *Anglia Square: Open Space & Recreational Routes Info for Residents* document at Appendix 13 sets details of off-site recreation opportunities within a short walk of the Site. The document includes details of a short circular route of approximately 3km or 40 minutes’ duration, and a longer circular route of 9km, some two hours’ duration, with the latter providing many opportunities for cross-links for shorter options.
- 7.3.11. The short route heads west of the Site into Gildencroft Park, a large public open space with landscaping and play area, and from there via quiet residential streets to Anderson’s Meadow on the banks of the River Wensum via Wensum Park. The route returns on the southern edge of the river, with the Marriott’s Way public footpath providing an alternative route, to return to St Crispins Road and the Site. The information document includes images and text of what can be seen en route to encourage new residents to explore their local area. A plan of the route is provided on p11.
- 7.3.12. The longer walk set out on p12 follows the same route at the outset, continuing from Anderson’s Meadow following the Marriott’s Way as far as Hellesdon Road, and returning generally following the River Wensum via Wensum Local Nature Reserve. The route is illustrated on p13, which shows the possible cross-links to make a shorter circular route.
- 7.3.13. In terms of enhancements to facilities on the walking routes, NCC has prepared a document setting out detailed costings for improvements to Gildencroft Park and Wensum Park. This is included at Appendix 15. Indicative plans prepared by Weston Homes are included at Appendix 16. In both cases, the schemes seek to improve public access and

enhance the natural greenspace qualities of the parks. It is noted that NCC will seek the payment of the total green infrastructure enhancement scheme cost through a S106 Obligation, and that the sum will be index-linked. The Applicant has agreed to this arrangement.

- 7.3.14. The tables included in Appendix 15 allow for improvements to recreational use through provision of additional benches / seats and signage; and enhancement and management of habitats, including tree planting and wildflower meadow establishment. These measures will increase the attractiveness of these two parks in close proximity to the Site to residents, as well as providing opportunities for greater wildlife interest. These enhancements are in line with Natural England's advice.
- 7.3.15. As well as these opportunities in close proximity to the Site, other open spaces within the city considered in the previous section will be available to new residents.
- 7.3.16. There will overall be a wide variety of high quality recreational opportunities available to new residents of the proposed Development.

In-combination Effects

- 7.3.17. As considered earlier in this report, the GIRAMS has been adopted by affected Local Planning Authorities and endorsed by Natural England to provide a strategic approach to the management of recreational effects on the Norfolk designated sites. Measures to do this have been set out, costed and agreed. The approach is based on a per-dwelling tariff of £185.93.
- 7.3.18. For the proposed development of up to 1,100 units, this would equate to a figure of **£204,523**, which is index-linked and the Applicant is content to pay.
- 7.3.19. In their letter of 23 September 2022 (see Appendix 3), Natural England *"agrees that this is sufficient to mitigate for in-combination impacts, should the alone impacts be appropriately considered..."*.

7.4. Further Assessment of Water Quality Effects

- 7.4.1. The Norfolk Nutrient Neutrality Calculator has established that the projected total Phosphorus budget for the site is 88.76 kg/year and the total Nitrogen budget is 2502.76 kg/year (see Appendix 11).
- 7.4.2. NCC has advised that based on the Interim Policy on Nutrient Neutrality a detailed nutrient mitigation scheme has been developed and costed. NCC has undertaken an Appropriate Assessment of the planned programme. Natural England has been consulted and a formal response is awaited. The applicant is committed to pay the requisite tariff to secure sufficient mitigation credits through the final agreed NCC mitigation scheme for the proposed development to be nutrient-neutral.
- 7.4.3. The NCC Interim Policy on Nutrient Neutrality at Appendix 12 sets out that the intention is to develop catchment-wide solutions in conjunction with other Norfolk authorities and water companies in the longer term,

but that the Interim Policy allows certain measures to be taken in the shorter term.

7.4.4. Paragraphs 14-21 of the Interim Policy set out mitigation options available through NCC-owned housing stock:

14. The installation of more water efficient fittings in bathrooms and kitchens in residential properties has been identified as a mitigation solution. When retrofitting water saving appliances, the water usage saved from the retrofitted properties will be replaced by the additional water from new dwellings. As a result, the volume of water entering the treatment works will stay the same and providing the treatment works operates to a permit limit, the effluent discharge concentration remains the same.

15. This solution is not applicable across the entire catchment area as it cannot be applied to wastewater treatment works (WwTWs) without a permit limit. For it to be effective WwTWs need to be operating at close to capacity with little headroom, which is not the case in all the treatment works in the catchment. However, the Whitlingham treatment works, to which almost all properties in Norwich discharge, typically does operate close to its permit limit and water efficiency measures fitted within its catchment would be effective at mitigating nutrients. Older houses generally have higher water usages per person and therefore have a greater potential for reducing nutrient loading.

16. This solution is only applicable to existing dwellings where an organisation, such as the Council, has control over properties, fittings, and any upgrade works. There may also be the possibility of Registered Providers and care providers also being able to retrofit their properties to generate credits.

17. Wastewater reductions from new water efficient appliances could be achieved during planned refurbishment and responsive repairs of such properties. The greater water saving is typically achieved through upgrades to bathrooms as opposed to kitchens, with improvements to toilets and showers providing the greatest reductions. Officers are confident that this solution could be executed in the Council's housing stock.

18. The Council owns approximately 14,500 Council houses and operates a rolling program of improvements to its Council housing, including upgrades to bathrooms and kitchens, both of which present an opportunity for more efficient fittings to be installed. The current 5yr programme has funding for the first 2 years during which some 763 properties are proposed for improvement, including works to bathrooms and kitchens. Additionally, the Council also installs new fittings as responsive repairs which are in addition to the Council's planned improvements program. Using the average over the last three years, it can be assumed that 493 dwellings would need some responsive repairs each year.

19. An average volume of water usage of around 150 l/person/day has been assumed for existing dwellings in the catchment. The WRc water efficiency calculator (WRc, 2021) has been used to approximate the water usage per appliance / fitting for usage of 150 l/person/day.

20. The Council's program of improvements currently installs fittings with a water usage of approximately 125 l/person/day. This represents a saving of approximately 25 l/person/day from the baseline.

21. In order to maximise the nutrient mitigation potential of the retrofitting program, the Council will install more water efficient fittings going forward. These are expected to reduce the water usage to 106 l/person/day, representing a saving of approximately 45 l/person/day.

7.4.5. Paragraphs 25-28 continue:

25. The planned 5yr programme sees 1,793 properties identified for planned upgrades to bathrooms and kitchens as well as 2,460 for responsive repairs. This would release 120.73 kg Total Phosphorus/yr and 3,353.58 kg Total Nitrogen/yr of mitigation, which is equivalent to approximately 1,412 new dwellings to be built. The calculations account for properties already completed since March 2022 to the current water efficiency specification.

26. The Council as landlord is in control of these properties and so can guarantee the perpetuity of the measures being installed, and the Council is also in control of the programme to ensure the mitigation is delivered in a timely manner. Essentially this means that the Council is in control of a form of mitigation which can be used to rapidly unblock some development up to the limit of the mitigation headroom.

27. In terms of nutrient neutrality mitigation this would require around 3 existing council dwellings to be retrofitted with improved water efficiency fittings to release 1 new dwelling (with a water efficiency of 110 l/person/day) draining to Whitlingham.

28. Based on the assumptions in Table 4, the mitigation cost per 1 new dwellings is estimated to be around £4,350 (3 x £1450). This figure will be refined once a more accurate cost of the water efficiency improvement programme is known. In practice the Norfolk Budget nutrient budget calculator would be used to determine the precise Total Phosphorus kg/yr(TP) and Total Nitrogen kg/yr (TN) mitigation requirements for a proposed development. The TP and TN headroom created by retrofitting would be apportioned and costed in kg/year units. The budget calculator has been used to calculate the mitigation budget requirements of a typical house and this allows an approximation of new dwelling headroom to be calculated.

7.4.6. Paragraphs 32 and 33 refer to implementation of the policy:

32. The use of the Council's mitigation credit will require resourcing in order to cover the cost of the works. The Council intends to secure proportionate contributions from developers, to be collected and pooled through section 106 agreements and to secure that no benefitting developments can be occupied until the mitigation credit has been funded. The Council may also enter into direct contracts to award and secure the credits and, as set out within this report, it is recommended the Executive Director of Development and City Services be delegated authority to agree any such awards / contracts. Legal agreements will need to provide for inflationary increases in costs to be met.

33. All developments should also be subject to conditions to secure high water efficiency.

- 7.4.7. Subsequent paragraphs consider the best approach to allocation of the 'headroom' created by these measures, with apportioning in accordance with a criteria-based interim policy-led approach being considered the most suitable (see paragraph 42 of Appendix 12).
- 7.4.8. Paragraph 49 sets out how the policy would work in practice:
- 49. It is recommended that applicants of the 'priority' developments should be invited to express an interest in utilising mitigation available through the Norwich City Retrofit scheme. Applicants would be required to provide a calculation of the nutrient budget mitigation requirements of their developments. This would enable verification of the availability of headroom and allow for the cost of the mitigation to be calculated.**
- 7.4.9. Paragraph 50 considers implementation:
- 50. Details of when any payment would need to be made (commencement or occupation) will be determined as part of the application process and secured in any related S106 agreement.**
- 7.4.10. Paragraph 51 identifies Anglia Square as a 'priority' development:
- 51. 'Priority' developments include the current Anglia Square planning application (ref: 22/00434/F) which would account for 1100 of the total available headroom figure for new dwellings. This is a significant proportion of the mitigation credit. The application performs strongly against each of the assessment criteria. The proposed 1100 dwellings (including up to 110 affordable homes (10%)) can make a very substantial contribution to housing supply and addressing housing need. The redevelopment of the site is a long held strategic objective of the Council as expressed through development plan policies and associated guidance over the years. Furthermore, the proposal represents the largest development scheme proposed in the city centre since Chapelfield. In the event of planning approval being granted in the first half of 2023, the £280+ million construction project would offer immediate prospects of boosting the city's economy. With demolition commencing late 2023 and construction continuing for the next 8 years. The development is predicted to create substantial job opportunities and result in transformative change in this part of the city. The proposed scheme includes replacement commercial floorspace, a new enlarged public square and public realm improvements to surrounding streets and under the flyover. These changes along with the new resident population will materially impact the medium and long-term viability and vitality of the wider Anglia Square / Magdalen Street district centre.**
- 7.4.11. Paragraph 53 recommends *"that the mitigation secured through fitting water efficiency measures into Council owned housing stock is offered to the 'Priority' developments"*.
- 7.4.12. The Applicant is content to pay the agreed tariff by means of a legal agreement. In facilitating these improvements to NCC-owned housing stock, the Applicant will generate headroom by offsetting existing effects elsewhere in the catchment.
- 7.4.13. This mitigation is based on a rate of 110 litres per person per day as per the Norfolk Calculator, and will have a planning condition imposing the optional water efficiency requirement of 110 litres per person per day

under Building Regulations Part G2. However, the Applicant has a desire to achieve greater water efficiency beyond this and therefore will be constructing the dwellings to a specification that achieves water efficiency of 105 litres per person per day. This will therefore comfortably comply with the planning condition that will be imposed. Measures to achieve this are summarised below.

7.4.14. The proposed Development will have five variations of specification for bathroom and kitchen across the different tenures. Water calculations demonstrating that water usage is restricted to a maximum of 105 litres/person/day are included at Appendix 17.

7.4.15. The following flow restrictors will be installed to all plots in order to meet the 105 litres per person per day:

For Private plots:

- WC: RAK FSO4RAK842TF @ 6/3L
- Bath: Fascino @ 225L
- Boiling water tap: Fascino hot and cold filtered water taps @ 5.68 LPM
- Sink tap: Fascino sink tap @ 5 LPM (Flow restrictor to be installed)
- Basin: Fascino SJ-F006S-60 @ 3LPM (Flow restrictor to be installed)
- Showers over baths (overhead and handheld): Fascino S00924 @ 5LPM (Flow restrictor to be installed)
- Ensuite showers (overhead, handheld and body jets: Fascino S00915 @ 8 (Flow restrictor to be installed)
- Dishwashers: either Zanussi ZDLN1511 600mm @ 0.76 L/PS, or Zanussi ZSLN1211 450mm @ 1.1L/PS
- Wash dryer: Zanussi Z716WT83BI @ 6.43L/KG

For Housing Association plots:

- WC: Sandringham 21 @ 6/4L
- Bath: Sandringham 21 @ 139L
- Sink tap: Bianco Daras @ 11.3LPM (Flow restrictor to be installed)
- Basin tap: Methven Motu MTBCP @ 4LPM
- Showers over bath (hand held): Methven Thermostatic TLVEFLF2 (1 bathroom plots) or TLVBSM (2 bathroom plots) @ 6LPM
- En Suite showers: Methven Kiri KLFCTSEFCP @ 6LPM

7.4.16. With the listed flow restrictors, all specifications meet the maximum of 105 litres per person per day.

7.5. Summary

7.5.1. Taking into account the avoidance and mitigation measures outlined above, at the Appropriate Assessment stage it is considered that the

development proposals will avoid any potential significant adverse effects when the project is considered alone or in combination.

7.6. Consideration of the In-Combination Test

- 7.6.1. It is considered that the potential effects identified in relation to the development proposals will be avoided or fully mitigated through the implementation of the measures described above, such that, at the Appropriate Assessment stage, it may be concluded that there would be no significant residual adverse effects on the designations (or component SSSIs) when the plan / project is considered alone.
- 7.6.2. On the basis that all other relevant development proposals will provide appropriate mitigation / avoidance measures, in line with the strategic package of measures (in relation to potential in-combination effects), and that when avoidance and mitigation is considered effects arising from the development proposals are nugatory, it is therefore concluded that there would not be any potential significant in-combination effects on the designated sites.

7.7. Assessment Method for Determining Effects on Site Integrity

- 7.7.1. Judgments on whether the integrity of the International sites are likely to be adversely and significantly affected should be made in relation to the features for which the International site was designated, their formal Conservation Objectives (where available), and set against the definition of integrity.
- 7.7.2. As referenced in Section 3 above, English Nature (now Natural England) produced internal guidance on determining site integrity (English Nature, 2004), which includes "*a simple, pragmatic checklist for assessing the likely effect on integrity*". This asks the competent authority to pose a series of five questions, as follows:
- a) That the area of Annex I habitats (or composite features) will not be reduced?
 - b) That there will be no direct effects on the populations of the species for which the site was designated or classified?
 - c) That there will be no indirect effects on the populations of the species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?
 - d) That there will be no changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?
 - e) That there will be no interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?

7.7.3. The guidance suggests that if the answer to all of these questions is 'Yes' then it is reasonable to conclude that there is not an adverse effect on the integrity. If the answer is 'No' to one or more of the questions, then further site-specific factors need to be considered in order to reach a decision.

7.7.4. These site-specific factors are:

- Scale of impact;
- Long-term effects and sustainability;
- Duration of impact and recovery/reversibility;
- Dynamic systems;
- Conflicting feature requirements;
- Off-site impacts; and
- Uncertainty in cause and effect relationships and a precautionary approach.

7.7.5. This process has been used to assess the impact of the potential effects on the integrity of the international / European designated sites.

7.7.6. The effects of the proposed development, together with avoidance and mitigation measures, are considered in relation to Natural England's site integrity checklist in Table 7.1 below:

	Qualifying Interest Feature(s)
The Broads SAC Broadland SPA Broadland Ramsar Breydon Water SPA Winterton-Horsey Dunes SAC Great Yarmouth and North Denes SPA North Norfolk Coast SAC North Norfolk Coast SPA North Norfolk Coast Ramsar The Wash and North Norfolk Coast SAC The Wash SPA The Wash Ramsar Norfolk Valley Fens SAC	See relevant table in section 5.
Has the Information for Appropriate Assessment shown that:-	
1) the area of Annex I habitats (or composite features) will not be reduced?	Yes. The proposed development will result in no losses through land take to the designations. They are well removed from the development site such that there is no likelihood of direct effects. Avoidance and mitigation measures have been put forward in respect of potential for physical damage and degradation through increased recreation on qualifying habitats of the designations.
2) there will be no direct effect on the population of the species for which the site	Yes. Avoidance and mitigation measures put forward in respect of potential for disturbance and habitat degradation through increased recreation, and for adverse effects through water quality.

was designated or classified?	
3) there will be no indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity / quality)?	Yes. The proposed development will have no significant adverse effects on the designating features of the European sites through recreational pressure or water quality, either alone or in combination.
4) there will be no changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?	Yes. The proposed development will have no significant adverse effects on the designating features the European sites through recreational pressure or water quality, either alone or in combination.
5) that there will be no interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?	Yes. The proposed development will have no significant adverse effects on the designating features of any of the European sites through recreational pressure or water quality, either alone or in combination. Avoidance and mitigation measures put forward in respect of potential for disturbance and habitat degradation through increased recreation pressure and water quality effects.

Table 7.1: Consideration of Natural England's integrity checklist.

- 7.7.7. As stated previously, the Natural England guidance suggests that if the answer to all of these questions is 'Yes' then it is reasonable to conclude that there will not be an adverse effect on integrity. It follows that in this case there is no need to consider any further site-specific factors in order to reach a decision.
- 7.7.8. As the project alone or in combination would not contribute to an overall significant effect that may have an adverse effect on the integrity of the designations, the proposed development would by definition be acceptable, subject to securing the mitigation and avoidance measures proposed.
- 7.7.9. It is therefore concluded that the proposed development would be acceptable under the tests of the Habitats Regulations and therefore in those terms it is considered that the Competent Authority could legally and safely grant consent for the proposed plan / project.
- 7.7.10. In accordance with paragraph 182 of the NPPF, as the Appropriate Assessment has concluded that the project will not adversely affect the integrity of International / European designated sites, the presumption in favour of sustainable development should apply.

7.8. **Summary of Appropriate Assessment**

- 7.8.1. Having considered all of the potential significant effects that could arise from the development proposals, in light of the avoidance and mitigation measures, Ecology Solutions conclude that the proposals would not be likely to give rise to a significant effect on the integrity of the designated sites when the development proposals are considered, either alone or in combination with other plans or projects. No additional adverse impacts have been identified in relation to the underlying SSSIs and no additional mitigation would be required.

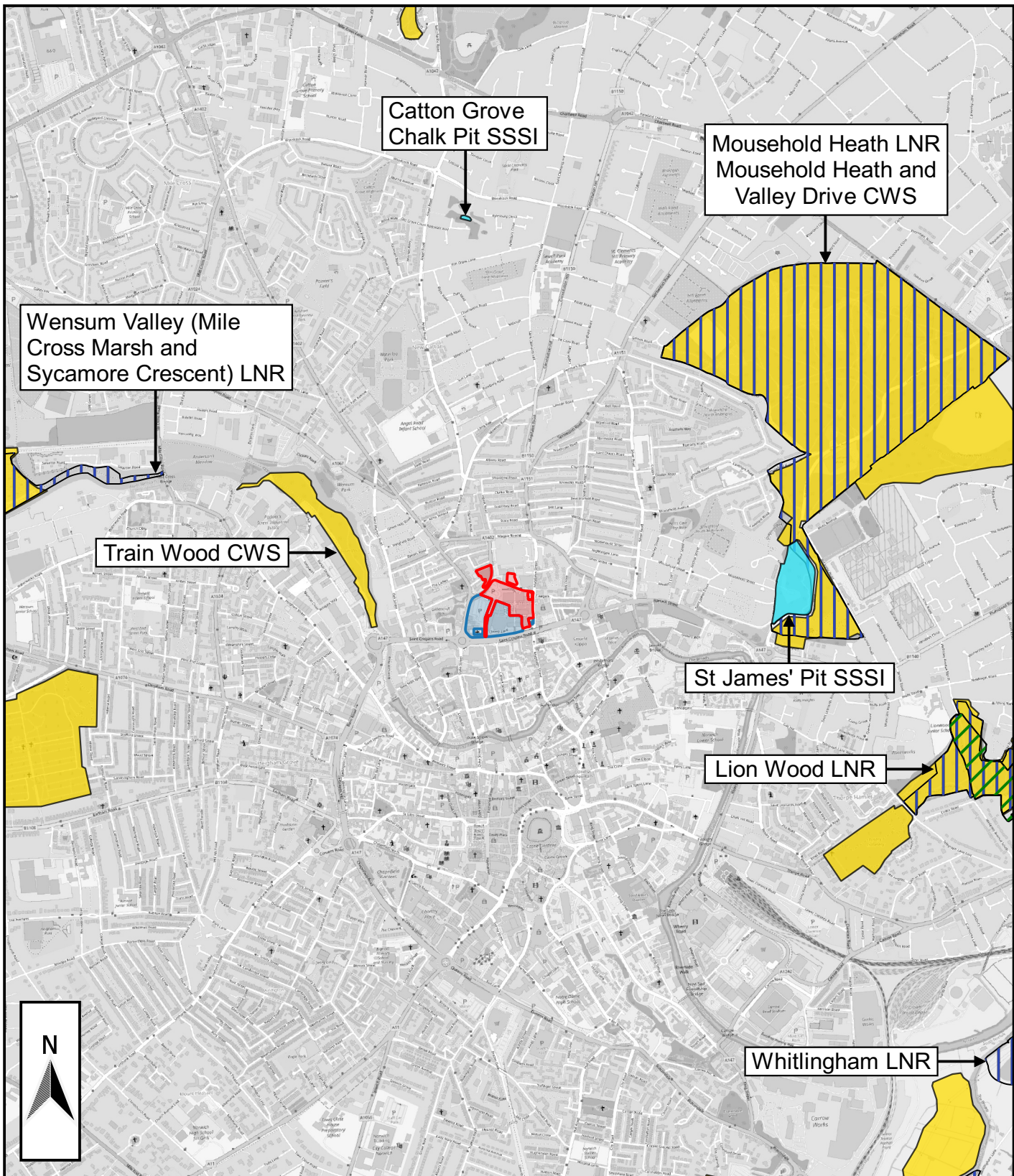
8. SUMMARY AND CONCLUSIONS

- 8.1. In this Shadow Habitats Regulations Assessment, produced by Ecology Solutions, a detailed assessment of the implications of the proposed development on European designated sites has been undertaken.
- 8.2. The findings of this work are set out within this document such that the Competent Authority (Norwich City Council), in exercising their duties under the Habitats Regulations, has all the necessary information before them in considering the proposed development (should they consider this to represent a 'plan or project' under the Habitats Regulations).
- 8.3. All relevant potential pathways for significant effects to arise as a result of the proposed development have been fully examined. This assessment has been undertaken with due regard to relevant legislation, case law and planning decisions, guidance and information provided by relevant bodies including Natural England. Full regard has been had to advice received in consultation with Natural England.
- 8.4. Having considered all of the potential significant effects that could arise from the development proposals, in light of the avoidance and mitigation measures, Ecology Solutions conclude that the proposals would not result in any adverse effects on the integrity on any European / international designated sites (in view of their conservation objectives), when the proposed development is considered alone or in combination with other plans or projects.
- 8.5. Hence the proposed development would, by definition, be acceptable subject to securing the mitigation and avoidance measures proposed. In those terms the competent authority could legally and safely grant consent.

PLANS

PLAN ECO1

Site Location and Ecological Designations



KEY:

- DETAILED APPLICATION BOUNDARY
- OUTLINE APPLICATION BOUNDARY
- SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
- LOCAL NATURE RESERVE (LNR)
- COUNTY WILDLIFE SITE (CWS)
- ANCIENT WOODLAND



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7948: ANGLIA SQUARE, NORWICH

PLAN ECO1: SITE LOCATION AND
ECOLOGICAL DESIGNATIONS

Rev: C
Mar 2022

PLAN ECO2

Existing Recreation Opportunities in the Locality



Wensum Park,
Train Wood,
Anderson's Meadow,
Marriott's Way

Chapelfield
Gardens

Gildencroft

Site

Catton Park

Mousehold Heath

Kett's Heights

Whitlingham
Country Park

Whitlingham
Country Park



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7948: ANGLIA SQUARE, NORWICH

PLAN ECO2: EXISTING
RECREATION OPPORTUNITIES
IN THE LOCALITY

Rev: A
Nov 2018

APPENDICES

APPENDIX 1

Natural England Consultation Response
15 July 2022

Date: 15 July 2022
Our ref: 398164
Your ref: 22/00434/F



planning@norwich.gov.uk

BY EMAIL ONLY

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Dear Sir/Madam

Planning consultation: Hybrid application for the comprehensive redevelopment of Anglia Square. Up to 1,100 dwellings and 8,000sqm flexible retail/commercial & non-residential floorspace including Community Hub etc.

Location: Anglia Square, Norwich, Norfolk, NR3 1DZ

Thank you for your consultation on the above dated 24 June 2022 which was received by Natural England on the same date

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

SUMMARY OF NATURAL ENGLAND'S ADVICE

FURTHER INFORMATION REQUIRED TO DETERMINE IMPACTS ON DESIGNATED SITES

We consider that without appropriate mitigation, the application could have potential significant effects on the following designated sites:

- The Broads Special Area of Conservation (SAC)
- Broadland Special Protection Area (SPA)
- Broadland Ramsar
- Breydon Water SPA
- Winterton-Horsey Dunes SAC
- Great Yarmouth and North Denes SPA
- North Norfolk Coast SAC
- North Norfolk Coast SPA
- North Norfolk Coast Ramsar
- The Wash and North Norfolk Coast SAC
- The Wash SPA
- The Wash Ramsar
- Norfolk Valley Fens SAC

As submitted, the application could have potential significant effects on the above sites arising from increases in recreational disturbance and nutrient enrichment. Natural England advises that further information is required in order to determine the significance of these impacts and the scope for mitigation. This is set out further in the 'detailed advice' section below.

Please re-consult Natural England once this information has been obtained.

Natural England's further advice on designated sites/landscapes and advice on other issues is set out below.

NATURAL ENGLAND'S DETAILED ADVICE

1) Advice on impacts to designated sites – further information required

Despite impact pathways from the proposed development to European Sites existing, the consultation documents provided do not include information to demonstrate that the requirements of regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended) (the 'Habitats Regulations') have been considered by your authority, i.e. the consultation does not include a Habitats Regulations Assessment (HRA).

It is Natural England's advice that the proposal is not directly connected with or necessary for the management of the European site. Your authority should therefore determine whether the proposal is likely to have a significant effect on any European site, proceeding to the Appropriate Assessment stage where significant effects cannot be ruled out. Natural England must be consulted on any appropriate assessment your authority may decide to make.

Natural England advises that the proposal is likely to have a significant effect on the above European sites through the following impact pathways and that you should therefore obtain the following information to help you undertake the Appropriate Assessment stage of the HRA process:

a) Water quality/nutrient neutrality advice

This proposal potentially affects European Sites vulnerable to nutrient impacts. Please refer to Natural England's overarching advice dated 16th March 2022 and sent to all relevant Local Planning Authorities.

When consulting Natural England on proposals with the potential to affect water quality resulting in nutrient impacts on European Sites please ensure that an HRA is included which has been informed by the Nutrient Neutrality Methodology (provided within our overarching advice letter). Without this information Natural England will not be in a position to comment on the significance of the impacts. For large scale developments, Natural England may provide advice on a cost recovery basis through our [Discretionary advice service](#). Natural England notes that the applicant is currently awaiting advice from the council to be able to prepare a shadow HRA that considers the Nutrient Neutrality methodology. Therefore, the advice in this letter will focus mostly on other aspects of this application. In particular, the green infrastructure and proposed mitigation for increased recreational disturbance.

However, it is noted that in Chapter 6 of the Environmental Statement (Iceni Projects Limited, March 2022), paragraph 6.62 states that due to improvements having been made to the Sewage Treatment Works (Whitlingham Trowse WRC) in 2019, adverse effects on designated sites would be avoided. It should be noted that Natural England does not concur with this assessment or consider previous upgrades to increase the capacity at the wastewater treatment works to be acceptable mitigation, and is of the view that this development would result in additional nutrients to the River Wensum Special Area of Conservation (SAC), the Broads SAC and Broadland Ramsar. Currently there is not a mechanism to enable developers to make contributions to water companies to bring forward additional improvements to wastewater treatment works. Even if there was such a mechanism then these improvements are likely to be required to enable designated site recovery and therefore they cannot be double counted (or traded) to facilitate development as this will undermine and/or hinder restoration of the designated site. Therefore, further mitigation measures should be considered under the Habitats Regulations.

All queries to Natural England in relation to the application of this methodology to specific applications or development of strategic solutions will be treated as pre-application advice and

therefore subject to chargeable services.

b) Recreational Disturbance Advice

Natural England's advice is that the mitigation of recreational disturbance impacts to the sites identified in paragraph 6.31 of the Environmental Statement requires a two-pronged approach involving a combination of 'on-site' informal open space provision and promotion (i.e. in and around the development site) and 'off-site' visitor access management measures (i.e. at the designated site(s) likely to be affected), as follows:

On-site mitigation measures:

We advise that, if effectively designed, the provision and promotion of 'on-site' measures can be important in containing routine recreational activities of new residents (including dog walking) within the area, thereby minimising any predicted increase in visits to the designated sites and the associated disturbance this causes. Natural England advises that all developments of 50 dwellings or more should provide such measures. To provide adequate mitigation, onsite Green infrastructure (GI) should be designed to provide a multifunctional attractive space of sufficient size to reduce frequent visits to the designated sites. The Suitable Accessible Natural Green Space (SANGS) guidance can be helpful in designing these; it should be noted that this document is specific to the SANGS creation for the Thames Basin Heaths, although the broad principles are more widely applicable but we advise that as a minimum, provisions should typically include:

- High-quality, informal, semi-natural areas
- Circular dog walking routes of 2.7 km¹ within the site and/or with links to surrounding public rights of way (PRoW)
- Dedicated 'dogs-off-lead' areas
- Signage/information leaflets to householders to promote these areas for recreation
- Dog waste bins
- The long term maintenance and management of these provisions

However, Natural England recognises the considerable constraints in fitting such measures within the site red line boundary and welcomes the work put in to the Landscape Strategy (Weston Homes, March 2022) and creating green spaces within the development. The Landscape Strategy includes a summary of the local greenspace currently available within the vicinity of the proposed development. When evaluating whether the available greenspace is suitable to minimise recreational disturbance to designated sites, the applicant may wish to refer to Natural England's [Accessible Natural Green Space Standards](#) (ANGSt). These can also be mapped using the Green Infrastructure [Map](#). It is our advice that these standards are also considered when ensuring that sufficient green space is provided within the development. In this case, we advise that consideration is given to enhancing and improving connectivity of these nearby greenspaces to fulfil this function. **We have recently advised on mitigation solutions for schemes with similar constraints and would be happy to advise the developer and/or their consultants on the detail of this through our charged Discretionary Advice Service, further information on which is available [here](#).**

The following advice is offered for enhancing the green infrastructure within the proposed development, with the aim of further reducing potential recreational disturbance on designated sites as result of this development.

- **Street Trees:** It is noted that the proposed green space appears to be predominantly made up of street trees with some bio-diverse roofs and small amounts hedgerows and shrubs. From the documents submitted, it looks as though many of the trees are planted within hard paving. Natural England refers you to the [urban tree manual](#) from Forest Research, and advises you to ensure that all planting is done in accordance with British Standard BS 8545:2014 to ensure the trees can reach their full potential and deliver a wide range of benefits.

- **Multifunctionality:** A key component of GI is its multifunctionality. Green space can benefit communities by providing space for exercise leading to improvement in mental and physical wellbeing, reducing flood risk, improving air quality and providing space for communities to gather and connect. It is noted that the Landscape Strategy considers some of these benefits in the design of the proposal. Natural England advises that there is further potential to provide more of these benefits, for example by providing more GI within the courtyards, and by expanding some of the currently proposed greenspaces to give more space for communities to connect with nature. The developer may also find it useful to refer to Natural England's [Green Infrastructure Principles](#). These will be followed by a set of standards which should be released in December this year which will aim to assist with monitoring and measuring the quality of green infrastructure. It may also be useful to apply the [Urban Green Factor](#) to measure the quality and quantity of the proposed GI. Typically, a development of this nature should aim for a score of 0.4 or more.
- **Sustainable drainage systems (SuDS):** We support the inclusion of SuDS to manage surface water disposal, these systems can be used to create wetland habitats for wildlife in an attractive aquatic setting. The [CIRIA guidance \(susdrain.org\)](#) provides useful information about integrating SUDs and biodiversity. The maintenance of SuDS should be provided for the lifetime of the project.
- **Management:** It is not clear from the documents provided how the landscaping will be monitored and managed going forward. This is an important part of ensuring that the delivered green space can be considered as mitigation for recreational disturbance. It is Natural England's advice that ongoing management and monitoring should be secured through an appropriately worded condition.

Off-site mitigation measures:

The unique draw of designated sites such as those identified above means that, even when well-designed, 'on-site' provisions are unlikely to fully mitigate impacts when developments are considered in combination. We therefore advise that consideration of 'off-site' measures is also required as part of the mitigation package for predicted recreational disturbance impacts. As you will be aware, Norfolk Local Planning Authorities (LPAs) are working collaboratively to deliver a Green Infrastructure and Recreational Impact Avoidance and Mitigation Strategy (GIRAMS) to ensure that the cumulative impacts of additional visitors arising from new developments of housing and tourism, to European sites, will not result in any adverse effects which cannot be mitigated. All Norfolk LPAs are collecting a tariff of £185.93 per new dwelling towards the strategic mitigation package, at the time planning permission is approved.

We welcome that the Environmental Statement recognises that this proposal will require payment into the strategy. However, paragraph 6.60 describes this payment, and the green infrastructure within the proposal, as embedded mitigation. It is Natural England's view that these measures are not considered to be embedded and should, therefore, be considered at the appropriate assessment stage of a HRA.

This is because Natural England notes that the 2018 [People Over Wind Ruling](#) by the Court of Justice of the European Union concluded that, when interpreting article 6(3) of the Habitats Directive, it is not appropriate when determining whether or not a plan or project is likely to have a significant effect on a site and requires an appropriate assessment, to take account of measures intended to avoid or reduce the harmful effects of the plan or project on that site. The ruling also concluded that such measures can, however, be considered during an appropriate assessment to determine whether a plan or project will have an adverse effect on the integrity of the European site.

2) Advice on Biodiversity Net Gain (BNG)

Natural England notes that the application documents include a BNG calculation that shows over 100% improvement for both habitats and hedgerow units. This is positive and Natural England welcomes the inclusion of BNG ahead of it becoming mandatory in 2023.

Once BNG is mandatory within the planning process, a 10% net gain will be required for habitats, hedgerows and rivers(where affected), individually. It is noted that this is a hybrid application and, as such, a further planning application will be made at a later date for the reserved matters of the outline sections. Depending on the applicant's timeline, this reserved matters application may have to consider BNG after it has become mandatory. Further information on delivering BNG can be found in Natural England's [Biodiversity Net Gain Brochure](#).

Please note that if your authority is minded to grant planning permission contrary to the advice in this letter, you are required under Section 281 (6) of the Wildlife and Countryside Act 1981 (as amended) to notify Natural England of the permission, the terms on which it is proposed to grant it and how, if at all, your authority has taken account of Natural England's advice. You must also allow a further period of 21 days before the operation can commence.

3) Other Advice

Further general advice on the protected species and other natural environment issues is provided at Annex A.

If you have any queries relating to the advice in this letter please contact me on 07471 515535.

Should the applicant wish to discuss the further information required and scope for mitigation with Natural England, we would be happy to provide advice through our [Discretionary Advice Service](#).

Please consult us again once the information requested above, has been provided.

Yours faithfully

Joanna Parfitt
Norfolk and Suffolk Team

Annex A – Additional Advice

Natural England offers the following additional advice:

Landscape

Paragraph 174 of the [National Planning Policy Framework](#) (NPPF) highlights the need to protect and enhance valued landscapes through the planning system. This application may present opportunities to protect and enhance locally valued landscapes, including any local landscape designations. You may want to consider whether any local landscape features or characteristics (such as ponds, woodland, or dry-stone walls) could be incorporated into the development to respond to and enhance local landscape character and distinctiveness, in line with any local landscape character assessments. Where the impacts of development are likely to be significant, a Landscape & Visual Impact Assessment should be provided with the proposal to inform decision making. We refer you to the [Landscape Institute](#) Guidelines for Landscape and Visual Impact Assessment for further guidance.

Best and most versatile agricultural land and soils

Local planning authorities are responsible for ensuring that they have sufficient detailed agricultural land classification (ALC) information to apply NPPF policies (Paragraphs 174 and 175). This is the case regardless of whether the proposed development is sufficiently large to consult Natural England. Further information is contained in [GOV.UK guidance](#). Agricultural Land Classification information is available on the [Magic](#) website on the [Data.Gov.uk](#) website. If you consider the proposal has significant implications for further loss of 'best and most versatile' agricultural land, we would be pleased to discuss the matter further.

Guidance on soil protection is available in the Defra [Construction Code of Practice for the Sustainable Use of Soils on Construction Sites](#), and we recommend its use in the design and construction of development, including any planning conditions. For mineral working and landfilling separate guidance on soil protection for site restoration and aftercare is available on [Gov.uk](#) website. Detailed guidance on soil handling for mineral sites is contained in the Institute of Quarrying [Good Practice Guide for Handling Soils in Mineral Workings](#).

Should the development proceed, we advise that the developer uses an appropriately experienced soil specialist to advise on, and supervise soil handling, including identifying when soils are dry enough to be handled and how to make the best use of soils on site.

Protected Species

Natural England has produced [standing advice](#)¹ to help planning authorities understand the impact of particular developments on protected species. We advise you to refer to this advice. Natural England will only provide bespoke advice on protected species where they form part of a Site of Special Scientific Interest or in exceptional circumstances.

Local sites and priority habitats and species

You should consider the impacts of the proposed development on any local wildlife or geodiversity sites, in line with paragraphs 175 and 179 of the NPPF and any relevant development plan policy. There may also be opportunities to enhance local sites and improve their connectivity. Natural England does not hold locally specific information on local sites and recommends further information is obtained from appropriate bodies such as the local records centre, wildlife trust, geoconservation groups or recording societies.

Priority habitats and Species are of particular importance for nature conservation and included in the England Biodiversity List published under section 41 of the Natural Environment and Rural Communities Act 2006. Most priority habitats will be mapped either as Sites of Special Scientific Interest, on the Magic website or as Local Wildlife Sites. List of priority habitats and species can be found [here](#)². Natural England does not routinely hold species data, such data should be collected when impacts on priority habitats or species are considered likely. Consideration should also be given to the potential

¹ <https://www.gov.uk/protected-species-and-sites-how-to-review-planning-proposals>

² <http://webarchive.nationalarchives.gov.uk/20140711133551/http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx>

environmental value of brownfield sites, often found in urban areas and former industrial land, further information including links to the open mosaic habitats inventory can be found [here](#).

Ancient woodland, ancient and veteran trees

You should consider any impacts on ancient woodland and ancient and veteran trees in line with paragraph 180 of the NPPF. Natural England maintains the Ancient Woodland [Inventory](#) which can help identify ancient woodland. Natural England and the Forestry Commission have produced [standing advice](#) for planning authorities in relation to ancient woodland and ancient and veteran trees. It should be taken into account by planning authorities when determining relevant planning applications. Natural England will only provide bespoke advice on ancient woodland, ancient and veteran trees where they form part of a Site of Special Scientific Interest or in exceptional circumstances.

Environmental gains

Development should provide net gains for biodiversity in line with the NPPF paragraphs 174(d), 179 and 180. Development also provides opportunities to secure wider environmental gains, as outlined in the NPPF (paragraphs 8, 73, 104, 120, 174, 175 and 180). We advise you to follow the mitigation hierarchy as set out in paragraph 180 of the NPPF and firstly consider what existing environmental features on and around the site can be retained or enhanced or what new features could be incorporated into the development proposal. Where onsite measures are not possible, you should consider off site measures. Opportunities for enhancement might include:

- Providing a new footpath through the new development to link into existing rights of way.
- Restoring a neglected hedgerow.
- Creating a new pond as an attractive feature on the site.
- Planting trees characteristic to the local area to make a positive contribution to the local landscape.
- Using native plants in landscaping schemes for better nectar and seed sources for bees and birds.
- Incorporating swift boxes or bat boxes into the design of new buildings.
- Designing lighting to encourage wildlife.
- Adding a green roof to new buildings.

Natural England's [Biodiversity Metric 3.1](#) may be used to calculate biodiversity losses and gains for terrestrial and intertidal habitats and can be used to inform any development project. For small development sites the [Small Sites Metric](#) may be used. This is a simplified version of [Biodiversity Metric 3.1](#) and is designed for use where certain criteria are met. It is available as a beta test version.

You could also consider how the proposed development can contribute to the wider environment and help implement elements of any Landscape, Green Infrastructure or Biodiversity Strategy in place in your area. For example:

- Links to existing greenspace and/or opportunities to enhance and improve access.
- Identifying opportunities for new greenspace and managing existing (and new) public spaces to be more wildlife friendly (e.g. by sowing wild flower strips)
- Planting additional street trees.
- Identifying any improvements to the existing public right of way network or using the opportunity of new development to extend the network to create missing links.
- Restoring neglected environmental features (e.g. coppicing a prominent hedge that is in poor condition or clearing away an eyesore).

Natural England's [Environmental Benefits from Nature tool](#) may be used to identify opportunities to enhance wider benefits from nature and to avoid and minimise any negative impacts. It is designed to work alongside [Biodiversity Metric 3.1](#) and is available as a beta test version.

Access and Recreation

Natural England encourages any proposal to incorporate measures to help improve people's access to the natural environment. Measures such as reinstating existing footpaths together with the creation of

new footpaths and bridleways should be considered. Links to other green networks and, where appropriate, urban fringe areas should also be explored to help promote the creation of wider green infrastructure. Relevant aspects of local authority green infrastructure strategies should be delivered where appropriate.

Rights of Way, Access land, Coastal access and National Trails

Paragraphs 100 and 174 of the NPPF highlight the important of public rights of way and access. Development should consider potential impacts on access land, common land, rights of way and coastal access routes in the vicinity of the development. Consideration should also be given to the potential impacts on the any nearby National Trails. The National Trails website www.nationaltrail.co.uk provides information including contact details for the National Trail Officer. Appropriate mitigation measures should be incorporated for any adverse impacts.

Biodiversity duty

Your authority has a [duty](#) to have regard to conserving biodiversity as part of your decision making. Conserving biodiversity can also include restoration or enhancement to a population or habitat. Further information is available [here](#).

APPENDIX 2

Natural England Advice on Water Quality
16 March 2022

Date: 16 March 2022



To: LPA Chief Executives & Heads of Planning,
County Council Chief Executives and Heads of Planning,
EA Area and National Team Directors,
Planning Inspectorate,
Natural Resources Wales (Cross border sites only) &
Secretary of State for Department for Levelling Up Housing & Communities
(DLUHC)

BY EMAIL ONLY

Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 060 3900

Dear Sir / Madam

Advice for development proposals with the potential to affect water quality resulting in adverse nutrient impacts on habitats sites.

1.0 Summary

This letter sets out Natural England's advice for development proposals that have the potential to affect water quality in such a way that adverse nutrient impacts on designated habitats sites¹ cannot be ruled out.

It also provides an update to those Local Planning Authorities (LPAs) whose areas include catchments where Natural England has already advised on how to assess the nutrient impacts of new development and mitigate any adverse effects, including through application of the nutrient neutrality methodology. It includes:

- Supporting Information (Annex A) which summarises the key tools and guidance documents available and how to take account of certain issues in any Habitats Regulations Assessment (HRA)
- a national map showing the affected catchments (Annex B)
- a list of habitats sites in unfavourable condition due to nutrients, where new development may have an adverse effect by contributing additional nutrients and therefore where nutrient neutrality is a potential solution to enable development to proceed (Annex C)
- a national generic Nutrient Neutrality Methodology (attached in covering email with this letter)
- a nutrient assessment methodology decision tree (Annex D)
- a flow diagram of the HRA process (Annex E)
- guidance on thresholds for insignificant effects for phosphorus discharges to ground (Annex F)
- Natural England Area Team contacts for each habitats site and catchment (Annex G)
- Catchment Specific Nutrient Neutrality Calculators and associated Calculator Guidance (attached in covering email with this letter)
- Site specific catchment maps (attached in covering email with this letter)
- Site specific evidence documents (new catchments only - attached in covering email with this letter)
- Nutrient Neutrality Principles (attached in covering email with this letter)

¹ Habitat sites are sites which are protected by the Habitats Regulations and includes Special Areas of Conservation (SAC) and Special Protection Areas (SPA). Any proposals that could affect them require a Habitats Regulations Assessment (HRA). Ramsar sites are also included as these are protected as a matter of government policy and also require a HRA where proposals may affect them.

- Nutrient Neutrality – A Summary Guide to Nutrient Neutrality (attached in covering email with this letter)

Natural England advises you, as the Competent Authority under the Habitats Regulations, to carefully consider the nutrients impacts of any new plans and projects (including new development proposals) on habitats sites and whether those impacts may have an adverse effect on the integrity of a habitats site that requires mitigation, including through nutrient neutrality.

This letter provides advice on the assessment of new plans and projects under Regulation 63 of the Habitats Regulations. The purpose of that assessment is to avoid adverse effects occurring on habitats sites as a result of the nutrients released by those plans and projects. This advice does not address the positive measures that will need to be implemented to reduce nutrient impacts from existing sources, such as existing developments, agriculture, and the treatment and disposal of wastewater. It proposes that nutrient neutrality might be an approach that planning authorities wish to explore.

This letter is being sent to the Environment Agency (EA) and all Heads of Planning and Chief Executives for the Local Planning Authorities (LPAs) which are affected by this advice as well as the following:

- The Planning Inspectorate as the Competent Authority for appeals and local plan examinations.
- Secretary of State for the Department of Levelling Up, Housing and Communities (DLUHC) as Competent Authority for called in decisions/appeals.
- County Councils where there is a 2-tier authority.
- Natural Resources Wales (for cross border sites).

NE will also be writing to Ofwat and water companies to inform them of our advice.

2.0 Background

In freshwater habitats and estuaries, poor water quality due to nutrient enrichment from elevated nitrogen and phosphorus levels is one of the primary reasons for habitats sites being in unfavourable condition. Excessive levels of nutrients can cause the rapid growth of certain plants through the process of eutrophication. The effects of this look different depending on the habitat, however in each case, there is a loss of biodiversity, leading to sites being in 'unfavourable condition'. To achieve the necessary improvements in water quality, it is becoming increasingly evident that in many cases substantial reductions in nutrients are needed. In addition, for habitats sites that are unfavourable due to nutrients, and where there is considerable development pressure, mitigation solutions are likely to be needed to enable new development to proceed without causing further harm.

In light of this serious nutrient issue, Natural England has recently reviewed its advice on the impact of nutrients on habitats sites which are already in unfavourable condition. Natural England is now advising that there is a risk of significant effects in more cases where habitats sites are in unfavourable condition due to exceeded nutrient thresholds. More plans and projects are therefore likely to proceed to appropriate assessment.

The principles underpinning HRAs are well established². At the screening stage, plans and projects should only be granted consent where it is possible to exclude, on the basis of objective information, that the plan or project will have significant effects on the sites concerned. Where it is not possible to rule out likely significant effects, plans and projects should be subject to an appropriate assessment. That appropriate assessment must contain complete, precise and definitive findings which are capable of removing all reasonable scientific doubt as to the absence of adverse effects on the integrity of the site.

² See, amongst others Case C-127/02 *Waddenvereniging and Vogelsbeschermingvereniging (Waddenzee)*; *R (Champion) v North Norfolk DC* [2015] EKC 52 (Champion); C-323/17 *People Over Wind, Peter Sweetman v Coillte Teoranta (People Over Wind)*; C-461/17 *Brian Holohan and Others v An Bord Pleanála (Holohan)*; Joined Cases C-293/17 and C-294/17 *Coöperatie Mobilisation for the Environment UA and Others v College van gedeputeerde staten van Limburg and Other (the Dutch Nitrogen cases)*.

Appropriate assessments should be made in light of the characteristics and specific environmental conditions of the habitats site. Where sites are already in unfavourable condition due to elevated nutrient levels, Natural England considers that competent authorities will need to carefully justify how further inputs from new plans or projects, either alone or in combination, will not adversely affect the integrity of the site in view of the conservation objectives. This should be assessed on a case-by-case basis through appropriate assessment of the effects of the plan or project. In Natural England's view, the circumstances in which a Competent Authority can allow such plans or projects may be limited. Developments that contribute water quality effects at habitats sites may not meet the no adverse effect on site integrity test without mitigation.

Mitigation through nutrient neutrality offers a potential solution. Nutrient neutrality is an approach which enables decision makers to assess and quantify mitigation requirements of new developments. It allows new developments to be approved with no net increase in nutrient loading within the catchments of the affected habitats site.

Where properly applied, Natural England considers that nutrient neutrality is an acceptable means of counterbalancing nutrient impacts from development to demonstrate no adverse effect on the integrity of habitats sites and we have provided guidance and tools to enable you to do this.

3.0 Natural England's Role and Advice

Natural England is the government's adviser for the natural environment in England. As a statutory consultee in the planning and environmental assessment processes we provide advice to planning authorities to support them in making plans and decisions that conserve and enhance the natural environment and contribute to sustainable development.

In reviewing our advice on water quality effects on habitats sites Natural England has:

- Undertaken an internal evidence review to identify an initial list of water dependent habitats sites (which includes their underpinning Sites of Special Scientific Interest) that are in unfavourable condition due to elevated nutrient levels (phosphorus or nitrogen or both). These sites are listed in Annex C. Development which will add nutrients to these sites may not meet the site integrity test without mitigation. This will need to be explored as part of the HRA. Nutrient neutrality is an approach which could be used as suitable mitigation for water quality impacts for development within the catchments of these sites (please refer to the Nutrient Neutrality – A Summary Guide for an explanation of nutrient neutrality).
- Revised our internal guidance for planning, permitting and other HRA consultations which have the potential to have water quality and in particular nutrient effects on a habitats site.

This advice applies to the following types of habitats sites:

- Special Protection Areas (SPA) designated under the Habitat Regulations 2017.
- Special Areas of Conservation (SAC) designated under the Habitat Regulations 2017.
- Sites designated under the Ramsar Convention, which as a matter of national policy are afforded the same protection as if they were designated under the Habitat Regulations 2017.
- Sites identified or required as compensatory measures for adverse effects on SPAs, SACs and Ramsar sites.

A plan or project will be relevant and have the potential to affect the water quality of the designated site where:

- It creates a source of water pollution (e.g. discharge, surface run off, leaching to groundwater etc) of either a continuous or intermittent nature or has an impact on water quality (e.g. reduces dilution).

AND

- There is hydrological connectivity with the designated site i.e. it is within the relevant surface and/or groundwater catchment.

AND

- The designated sites interest features are sensitive to the water quality pollutant/impact from the plan/project.

For LPAs where Natural England has already provided advice on this matter: Natural England has already provided advice to some local authorities on how to address the impacts of development which has the potential to increase nutrient emissions and adversely affect the integrity of habitats protected sites. The sites subject to this previous advice are listed in Annex C Table 1. There is an agreed approach between Natural England and these authorities on applying nutrient neutrality as a mitigation measure to enable development to proceed without causing harm to the integrity of those habitats sites (which are in unfavourable condition due to elevated nutrient levels). We have advised that a likely significant effect from development that increases these nutrients cannot be ruled out³. In the absence of evidence to the contrary, our advice has been and continues to be that all new housing development proposals (including any other additional locally specific advice which has been issued), will need to consider, via an appropriate assessment, the impact of adding to the existing nutrients levels / loads where water quality targets are not being achieved for these habitats sites. Having carried out that assessment, permission for the plan or project may only be given if the assessment allows you to be certain that it will not have an adverse impact on the integrity of the site i.e. where no reasonable scientific doubt remains as to the absence of effects⁴.

We are writing to your authority now to keep you updated on the development of the approach including the availability of an updated package of tools and guidance. We recommend that your authority moves to using the updated generic Nutrient Neutrality Methodology (attached) and the updated catchment calculators (attached) in preference to existing methodologies whether produced by Natural England or your own authority. Your authority will be best placed to consider how it transitions to the new tools and guidance. Natural England recognises that for some existing catchments where nutrient neutrality is being implemented and mitigation is being actively progressed, authorities may need to consider the associated practicalities of moving to the new guidance whilst recognising their role as Competent Authority. The updated generic Nutrient Neutrality Methodology and associated catchment calculators incorporates new information and evidence, which is explained in Annex A.

For local authorities where this advice is new: Natural England advises you, as the Competent Authority under the Habitats Regulations, to fully consider the nutrients implications on the sites identified in Annex C Table 2 when determining relevant plans or projects and to secure appropriate mitigation measures (see Annex A, para 6 for mitigation options).

When considering a plan or project that may give rise to additional nutrients within the affected catchments, you should undertake a HRA. An Appropriate Assessment will be needed where a likely significant effect (alone or in-combination) cannot be ruled out, even where the proposal contains mitigation provisions. The need for an Appropriate Assessment of proposals that includes mitigation measures intended to avoid or reduce the harmful effects of a plan or project is well established in case law⁵. The Competent Authority should only grant permission if they have made certain at the time of Appropriate Assessment that the plan or project will not adversely affect the integrity of a habitats site i.e. where no reasonable scientific doubt remains as to the absence of effects⁶.

The application of nutrient neutrality as mitigation for water quality effects from development has been tested in *Wyatt v Fareham case*⁷. The High Court dismissed an application for judicial review that planning permission which applied nutrient neutrality as mitigation did not satisfy the Habitats

³ Natural England has agreed that for some sites it is appropriate to screen out insignificant discharges to ground of phosphorus where certain criteria are met. See Annex E for further details

⁴ Unless the further conditions in regs. 64 and 68 apply.

⁵ *Gladman Developments Limited v S of S for Housing, Communities and Local Government and another* [2019] EWHC 2001 (Admin)

⁶ Unless the further conditions in regs. 64 and 68 apply.

⁷ *Wyatt v Fareham BC* [2021] EWHC 1434 (Admin)

Regulations. The case has now been appealed. Where properly applied Natural England considers that 'nutrient neutrality' can be a robust way to mitigate nutrient impacts from development.

Your authority may wish to consider a nutrient neutrality approach as a potential solution to enable developments to proceed in the catchment(s) where an adverse effect on site integrity cannot be ruled out. For such an approach to be appropriate, the measures used to mitigate nutrients impacts should not compromise the ability to restore the designated site to favourable condition and achieve the conservation objectives (Further guidance is provided on what this means in practice in the Nutrient Neutrality Principles document, attached).

4.0 Plans and Projects Affected

Development

The Nutrient Neutrality Methodology enables a nutrient budget to be calculated for all types of development that would result in a net increase in population served by a wastewater system.

It covers all types of overnight accommodation including new homes, student accommodation, care homes, tourism attractions and tourist accommodation and permitted development⁸ (which gives rise to new overnight accommodation) under the Town and Country Planning (General Permitted Development) (England) Order 2015⁹.

For authorities where Natural England's advice is already being applied the development types affected remain as previously advised but are summarised in Table 1 Annex C.

This advice also applies to planning applications at the reserved matters approval stage of the planning application process, and to applications for grants of prior approval and/or certificates of lawfulness for a proposed use or operation.

Tourism attractions and tourism accommodation are included in the methodology as these land uses attract people into the catchment and generate additional wastewater and consequential nutrient loading on the designated sites. This includes self-service and serviced tourist accommodation such as hotels, guest houses, bed and breakfasts, self-catering holiday chalets and static caravan sites. Other types of proposal should be considered on their individual merits, for example conference facilities that generate overnight stays.

Other types of business or commercial development, not involving overnight accommodation, will generally not need to be included in the assessment unless they have other (non-sewerage) water quality implications. For the purposes of the Methodology, it is assumed that anyone living in the catchment also works and uses facilities in the catchment, and therefore wastewater generated can be calculated using the population increase from new homes and other accommodation. This removes the potential for double counting of human wastewater arising from different planning uses.

Permitting

Activities that require an environmental permit (such as waste operations, water discharge activities and groundwater activities) should be subject to an HRA where they are carried out within the catchment of a habitats site and there is a risk that they may affect water quality within that catchment.

Where a likely significant effect on the habitats site cannot be ruled out, they should be subject to an appropriate assessment. Mitigation will be required if an adverse effect on the integrity of the site cannot be ruled out, although depending on the type of permit being considered it may not be appropriate, to apply the standard nutrient neutrality methodology to such plans and projects. This would need to be considered on a case by case basis.

⁸ Please note the condition on permitted development relating to European sites is set out in Regulation 75 of the Habitats Regulations 2017. The statutory condition on permitted development in regulation 75 only applies the HRA procedure (via regulations 76 and 77) to statutory European Sites. It therefore only applies to Special Areas of Conservation (SAC's) and Special Protection Areas (SPA's) it does not apply to Ramsar sites, proposed SAC's or potential SPA's or to sites identified, or required, as compensatory measures for adverse effects on habitats sites.

⁹ Planning permission granted for permitted development is subject to regs. 75-78 of the Habitats Regulations.

Other Plans and Projects

Whilst nutrient neutrality is only currently being applied to development that would result in a net increase in population served by a wastewater system, the HRA requirements will apply to any plans or projects, including agricultural or industrial plans and projects that have the potential to release additional nitrogen and / or phosphorus into the system and that require an LPAs or the EA's consent, permission or approval.

A case-by-case approach will need to be adopted for these. Early discussions with Natural England via our chargeable Discretionary Advice Service (DAS) are recommended [Natural England Discretionary Advice Service](#).

Competent Authorities must be cognisant of their duties under the Habitats Regulations when performing any of their functions. Competent Authorities may reasonably conclude that a HRA is required whenever they receive an application for any consent, approval, licence or permission for plans and projects not expressly referenced in this advice that may affect a habitats site. Natural England would welcome further discussion with you on any other types of plans and projects that you consider may have nutrients impacts.

5.0 Supporting Information

Annex A of this letter outlines the tools and guidance documents that will support LPAs in implementing this advice. There are also a suite of documents appended to this email including the generic Nutrient Neutrality Methodology, catchment specific calculators and associated guidance, catchment maps, Nutrient Neutrality Principles, Nutrient Neutrality – A Summary Guide and site specific evidence documents. We recommend reading the Nutrient Neutrality – A Summary Guide to help your understanding of what is a complex issue. Natural England has been working closely across government departments (Defra and DLUHC) in the preparation of this support package and will continue to do so in the development of longer term solutions.

The Planning Advisory Service will be hosting detailed teach ins and Q&A sessions on nutrient neutrality and we therefore strongly advise joining these as a first step to understanding the issue and as an opportunity to raise questions. Please follow the link for further details: [Nutrient neutrality and the planning system | Local Government Association](#)

Area Team contacts have been provided in Annex G as an initial point of contact for informal discussions. However, should you have any detailed or technical questions concerning this advice, please contact consultations@naturalengland.org.uk marked for the attention of the relevant Area Team. Please ensure that any formal consultations are also sent to consultations@naturalengland.org.uk.

Yours faithfully,



Melanie Hughes

Sustainable Development Programme Director

ANNEX A: Supporting Information

This Annex summarises the key information and tools that are available to enable LPAs to implement Natural England's advice contained in this letter. It also explains how to take account of the following issues in any HRA:

- Habitats sites which are in unfavourable condition due to nutrients
- Use of permitted Wastewater Treatment Works (WwTW) headroom
- Summary of the updated generic Nutrient Neutrality Methodology
- Status of the National Nutrient Methodology and Calculators
- Mitigation options
- Forthcoming tools and guidance

1.0 Available Tools and Guidance

To help competent authorities take account of these water quality issues and develop strategic solutions, Natural England has provisionally developed the following tools and guidance:

1. A national generic Nutrient Neutrality Methodology (attached)
2. A national map showing the affected catchments (Annex B)
3. Table 1 listing the habitats sites that Natural England has previously advised are in unfavourable condition due to excessive nutrients and will require a HRA and where nutrient neutrality is a potential solution to enable development to proceed (Annex C).
4. Table 2 listing the additional habitats sites which are in unfavourable condition due to excessive nutrients which will require a HRA and where nutrient neutrality is a potential solution to enable development to proceed (Annex C).
5. A nutrient assessment methodology decision tree (Annex D)
6. A HRA Flow chart (Annex E)
7. Thresholds for insignificant levels of phosphorus discharges to ground (Annex F)
8. Area Team contacts for each habitats site and catchment (Annex G)
9. Catchment specific Nutrient Neutrality Calculators and associated Calculator Guidance
10. Detailed catchment specific maps (attached)
11. Evidence summary for each habitats site (new catchments only) including, brief site description, habitats site designated water dependent features, names of component SSSIs where relevant and summary of water quality data including targets and exceedances (attached).
12. Nutrient Neutrality Principles (attached)
13. Nutrient Neutrality – A Summary Guide to Nutrient Neutrality

The Nutrient Neutrality Methodology is a national generic methodology which can be used for all affected catchments and sites (as listed in Annex C). The methodology can be used for both phosphorus and nitrogen. It provides a framework and a set of agreed "input values" to enable a nutrient budget to be determined for any development draining into a habitats site. These values are based on updated information and evidence; Natural England considers that they are suitably precautionary¹⁰ and address impacts in perpetuity to remove risks to site integrity beyond reasonable scientific doubt. The nutrient budget calculated should form part of the Appropriate Assessment (AA) of any HRA produced to address nutrient impacts on affected habitats sites.

The HRA Flow Chart summarises the key stages in the HRA process and the questions which need to be answered in relation to the habitats site and the proposed development at the screening and the appropriate assessment stages.

Guidance on Thresholds for Insignificant Effects from Phosphorus Only. This identifies the conditions which must be met to enable the effects of phosphorus, where it discharges to ground, to be considered as being insignificant. Where best available evidence indicates that these

¹⁰ Precautionary values are used for key variables and an additional buffer is applied in stage 4 of the methodology.

conditions are met, Natural England's advice is that a conclusion of no LSE, either alone or in combination, for phosphorus can be reached. Note this does not apply to nitrogen.

The Catchment Calculators have been developed for each designated habitats site and its catchment. They enable nutrient budgets to be calculated for phosphorus and nitrogen. The calculators will be in an Excel spreadsheet format. There will be an associated guidance document for each calculator.

Site Specific Catchment Maps show the extent of the affected catchment. Natural England advises that a HRA of water quality impacts on the habitats sites is undertaken for developments that are within, or discharge to, Wastewater Treatment Works (WwTW) that are within these catchments.

Evidence Summary for each habitats site. This document includes the site name and site details including reasons for designation, nutrient pressure (i.e. whether it is nitrogen, phosphorus or both), water quality evidence and information on the underpinning Sites of Special Scientific Interest (SSSIs) for the habitats site.

Nutrient Neutrality Principles. These set out the key principles which must be met for nutrient neutrality to be an effective mitigation measure which can be relied upon to enable development to proceed that would otherwise adversely affect the integrity of habitats sites.

2.0 Where a Habitats Site is Currently Unfavourable Due to Nutrients

Where a site is considered unfavourable due to exceeded nutrient levels and there is the possibility of further nutrient loading from a new plan or project, Natural England advises that Competent Authorities need to carefully consider the circumstances where plans or projects can be authorised. In many cases, an Appropriate Assessment (AA) is likely to be the appropriate stage to consider these matters more thoroughly.

Where the plan or project will (or it cannot be ascertained that it will not) contribute additional significant nutrients, alone or in-combination directly to, or upstream of, any unfavourable location which is important for maintaining or restoring the sensitive designated interest features, then Natural England advises that either there is a Likely Significant Effect (LSE) or a LSE cannot be ruled out and therefore, an Appropriate Assessment should be undertaken. We advise that as the Competent Authority you should consider the implications of relevant case law in any HRA. Annex F identifies "Thresholds for Insignificant Effects" for phosphorus discharges to ground.

3.0 Use of Permitted Wastewater Treatment Works (WwTW) Headroom

Headroom (flow or quality) in WwTW discharge permits has largely come about due to decisions being made by the Competent Authority based on taking a 'fair share' approach that relies on proportionality (i.e. relying on action by each sector to achieve favourable conservation status) and/or through water companies significantly over-performing on their permits. In many situations, headroom has been eroded as the habitats site water quality objectives have become more stringent, or there is new available information since the last AA of the permit.

Competent Authorities who wish to rely on the reasoning or conclusions in previous AA should consider the age of the AA, its robustness and whether evidence or circumstances have changed and therefore whether additional consideration is needed. Careful consideration will be needed where the habitats site feature is unfavourable due to elevated nutrient levels and plans or projects contribute further loading. Competent Authorities should consider:

- Any changes to the habitats site nutrient objectives or related ecological objectives since the AA was undertaken.
- Any new relevant information since the AA e.g. change to site condition, information on how measures relied on in the AA have performed.

- Whether the previous AA complies with current legal requirements as a result of any changes to Case law.
- Whether any measures taken into account in the AA can be still be safely relied on to deliver the anticipated effects so that no reasonable scientific doubt remains as to their efficacy and delivery. For example, if a decision on a permit was based on another sector (such as agriculture) also delivering reductions to enable the site to achieve the water quality objectives, those measures to be taken on other sectors should be sufficiently certain so that they can lawfully be considered in an AA.

The preferred approach is to have a strategic plan which considers what is required from all sources (e.g. Diffuse Water Pollution Plan /Nutrient Management Plan) based on the latest evidence, is sufficiently certain and can therefore be used to identify and enable the development of WwTW headroom that can be used for growth, which competent authorities can then rely on to inform their AA. However due to the difficulties with providing sufficient certainty in these plans this may not be possible in the short to medium term for some habitats sites and may remain a longer term aim.

4.0 Updated Nutrient Neutrality Methodology

This new methodology incorporates updated information as detailed below. For those authorities which are currently implementing nutrient neutrality Natural England recommends that they move to applying the updated methodology (attached) and the catchment calculators (attached) in preference to any existing methodologies whether produced by Natural England or your own authority.

- The Generic Methodology includes the latest version of Farmscoper (version 5) which includes more up to date values for the various variables. The updated approach also uses the actual outputs rather than averaged values from Farmscoper for detailed farm types broken down by rainfall, drainage and Nitrate Vulnerable Zones. The benefit of taking the detailed farm types approach is that it offers a more specific budget calculation for the actual nutrient losses from the development or mitigation land to be taken into account.
- The Generic Methodology covers all potential different situations on water usage that might occur across the full range of catchments.
- It provides a more consistent approach for dealing with onsite wastewater treatment systems.
- Pet waste is not considered in the greenspace export coefficient as this type of waste is taken into account in the urban surface water run off element of the calculator.
- The new methodology uses a different approach for calculating the urban export co-efficient so that it is applicable across the country. The values take into account the type of urban land and development site specific rainfall. This results in export values that will be specific to the rainfall at the location within the catchment.

5.0 Status of the National Nutrient Methodology and Calculators

Natural England is issuing the National Generic Methodology (and the associated catchment calculators) to provide Local Planning Authorities with the tools to progress nutrient neutrality as a potential mitigation solution to enable development that would otherwise adversely affect the integrity of habitats sites to proceed. However, at present this guidance **should be considered as provisional** due to the outstanding appeal to the Court of Appeal in **Wyatt v Fareham BC** [2021] EWHC 1434 (Admin), which although not concerned with the National Generic Nutrient Neutrality Methodology, could impact on certain elements contained within the Methodology because that case considers a similar (but not identical) earlier methodology for the Solent region. The Court of Appeal has granted permission for the appeal to be heard. The dates of the hearing are 5th and 6th April 2022. The outcome of the appeal hearing is not known. Nevertheless, Natural England is encouraged that the Judge in the High Court upheld Natural England's nutrient neutrality approach in principle and has responded to the Judge's comments in the Methodology. Natural England

intends to review this Methodology following judgement in the appeal in **Wyatt** which may require amendments to be made to the Methodology.

6.0. Mitigation Options

Mitigation to enable development to proceed within the affected catchments of the designated sites listed in Annex C can include nutrient neutrality as an option to avoid either permanent, or temporary increases in nutrients on the affected sites. Suitable mitigation measures might include constructed wetlands, land use change or retrofitting of Sustainable Urban Drainage systems (SUDs). Such measures must be effective for the duration of the impacts. In the case of new housing the duration of the impact is typically taken as in perpetuity, with the costs of maintaining, monitoring and enforcing mitigation calculated for a minimum of 80 – 125 years. It does not, however, follow that mitigation is not needed after that period, but rather the expectation is the mitigation will continue indefinitely (e.g. through securing appropriate permanent land use change).

There may be circumstances in which it is possible to define the 'lifetime of the development' more precisely, for example where consent is sought for the construction and use of a temporary structure that will be removed after a fixed period. In those circumstances, a Competent Authority may require mitigation to be maintained for a shorter period providing the Competent Authority is certain that adverse impacts on the integrity of a habitats site will not occur after the mitigation is removed. In those circumstances, a bespoke nutrient budget will be required, and early discussions with Natural England via our chargeable DAS are recommended [Natural England Discretionary Advice Service](#).

Natural England has identified that nutrient neutrality is an option which can be used to mitigate the impacts of excess nutrients from development for the majority of sites listed in Annex C. However, there may be instances where due to the nature of the habitats site and/ or the location and scale of development it may not be appropriate to apply nutrient neutrality, as doing so would compromise the ability to restore the site to favourable conservation status in the long term, or it may not be possible to identify mitigation which will enable the development to be nutrient neutral. Situations where this is more likely to apply are explained in Annex C.

The extent of these nutrient neutrality constraints will be site and often development specific so will need to be considered on a case-by-case basis. Natural England recommends that Competent Authorities should carefully consider whether it is possible to allocate development in catchments or parts of catchments of sites which are likely to have significant constraints in being able to apply nutrient neutrality. Where nutrient neutrality cannot effectively mitigate the nutrient impacts of new developments, then consent should only be granted where other mitigation can effectively prevent an adverse effect on the integrity of site.

When consulting Natural England on proposals with the potential to affect water quality resulting in nutrient impacts on habitats sites, please ensure that a Habitats Regulations Assessment is included which has been informed by the Nutrient Neutrality Methodology (attached). Further guidance on the process is provided by the Decision Tree (Annex D) and HRA flow Diagram (Annex E) Without this information Natural England will not be in a position to comment on the significance of the impacts or the scope of any mitigation which may be required. For large scale developments, Natural England may provide advice on a cost recovery basis through our Discretionary Advice Service

All queries in relation to the application of this methodology to specific applications or development of strategic solutions will be treated as pre-application advice and therefore subject to chargeable services.

7.0 Forthcoming Tools and Guidance

Natural England's SSSI Impact Risk Zones will also be updated to include the affected catchments.

Annex B: National Map of Catchments



European protected sites requiring nutrient neutrality strategic solutions Nutrient neutrality SSSI catchments

- █ SSSI subject to nutrient neutrality strategy
- █ Nutrient neutrality SSSI catchment

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Annex C: Habitats sites in unfavourable condition and where nutrient neutrality has been identified as a potential mitigation solution to enable development to proceed.

Table 1: Existing sites in unfavourable condition due to excessive nutrients which require a Habitats Regulations Assessment (HRA) and where nutrient neutrality is being deployed as mitigation.

Habitats Site & Catchment	LPA Affected	Nutrient	Summary of Development Types Affected	Nutrient Neutrality Methodology and Calculator produced by Natural England or LPA*.
Poole Harbour SPA / Ramsar	Dorset Council Bournemouth, Christchurch and Poole Council	Nitrogen and Phosphorus	Additional development that will result in a net increase in population served by a wastewater system, including new homes, student and tourist accommodation	Nitrogen Reduction in Poole Harbour Supplementary Planning Document (SPD)
The Solent	Basingstoke and Deane Borough Council Chichester District Council East Hampshire District Council Eastleigh Borough Council Fareham Borough Council Gosport Borough Council Havant Borough Council Isle of Wight Council New Forest District Council New Forest National Park Authority Portsmouth City Council South Downs National Park Authority Southampton City Council Test Valley Borough Council Wiltshire Council Winchester City Council	Nitrogen for existing catchment (River Itchen includes Phosphorus and Nitrogen. See River Itchen in Table 2 for further details)	Additional development that will result in a net increase in population served by a wastewater system, including new homes, student and tourist accommodation	Methodology and Calculator developed and provided by Natural England.
River Avon SAC	Bournemouth Christchurch and Poole Council	Phosphorus	Additional development that will result in a net increase in population served by a	Interim Phosphate Calculator

	Dorset Council New Forest District Council New Forest National Park Authority Test Valley Borough Council Wiltshire Council		wastewater system, including new homes, student and tourist accommodation	
River Camel SAC	Cornwall Council	Phosphorus	<ul style="list-style-type: none"> Additional development that will result in a net increase in population served by a wastewater system, including new homes, student and tourist accommodation. Additional locally specific advice 	Phosphate Calculator developed by consultants on behalf of Local Planning Authority
Stodmarsh SAC/Ramsar	Ashford Borough Council Canterbury City Council Dover District Council Folkestone and Hythe District Council Maidstone Borough Council Swale Borough Council	Nitrogen and Phosphorus	Additional development that will result in a net increase in population served by a wastewater system, including new homes, student and tourist accommodation.	Methodology and Calculator developed and provided by Natural England.
River Wye SAC (only applies to the River Lugg component)	Herefordshire Council Malvern Hills District Council	Phosphorus	Additional development that will result in a net increase in population served by a wastewater system, including new homes, student and tourist accommodation.	Phosphate Calculator developed by consultants on behalf of Local Planning Authority
Somerset Levels and Moors Ramsar	Dorset Council Exmoor National Park Mendip District Council Mid Devon District Council Sedgemoor District Council Somerset West and Taunton District Council South Somerset District Wiltshire Council	Phosphorus	<ul style="list-style-type: none"> Additional residential and commercial development that will result in a net increase in population served by a wastewater system, including new homes, student and tourist accommodation. Additional locally specific advice 	Methodology and calculator developed by consultants on behalf of Local Planning Authority

*Note: Nutrient neutrality calculators have been provided for all the catchments listed above, even where there is an existing nutrient neutrality calculator .

Table 2: Additional habitats sites in unfavourable condition due to excessive nutrients which require a Habitats Regulations Assessment (HRA) and where nutrient neutrality is a potential solution to enable development to proceed.

Habitats site & Catchment	LPA Affected	Nutrient
Chesil and the Fleet SAC/SPA	Dorset Council	Nitrogen and Phosphorus
Esthwaite Water Ramsar	South Lakeland Council	Phosphorus
Hornsea Mere SPA	East Riding of Yorkshire Council	Nitrogen and Phosphorus
Lindisfarne SPA/Ramsar	Northumberland County Council	Nitrogen
Oak Mere SAC	Cheshire West and Chester Council	Phosphorus
Peak District Dales SAC	Derbyshire Dales District Council High Peak Borough Council Peak District National Park Authority	Phosphorus
River Axe SAC	Dorset Council East Devon District Council Somerset West & Taunton Council South Somerset District Council	Phosphorus
River Clun SAC	Herefordshire Council Shropshire Council	Nitrogen and Phosphorus
River Derwent & Bassenthwaite Lake SAC (only applies to catchments of Bassenthwaite Lake (River Derwent and Tributaries SSSI unit 1) and River Marron (unit 124 of River Derwent and Tributaries SSSI).	Allerdale Borough Council Copeland Borough Council Eden District Council Lake District National Park	Phosphorus
River Eden SAC	Allerdale Borough Council Carlisle City Council Durham County Council Eden District Council Lake District National Park Northumberland County Council Northumberland National Park Richmondshire District Council South Lakeland Council	Phosphorus
River Itchen SAC (part of Solent Catchment)	Basingstoke and Deane Borough Council East Hampshire District Council Eastleigh Borough Council Winchester City Council	Nitrogen and Phosphorus
River Kent SAC (only applies to catchments of units 104 and 111 of River Kent SSSI)	Eden District Council Lake District National Park South Lakeland Council	Phosphorus
River Lambourn SAC	Swindon Borough Council Vale of White Horse District Council West Berkshire Council Wiltshire Council	Phosphorus
River Mease SAC	East Staffordshire Borough Council Hinckley and Bosworth Borough Council Lichfield District Council North Warwickshire Borough Council	Phosphorus

	North West Leicestershire District Council South Derbyshire District Council	
River Wensum SAC	Borough Council of King's Lynn and West Norfolk Breckland Council Broadland & South Norfolk Council North Norfolk District Council Norwich City Council	Phosphorus
Roman Walls Loughs SAC	Northumberland County Council Northumberland National Park Authority	Phosphorus
Rostherne Mere Ramsar	Cheshire East Council	Nitrogen and Phosphorus
Teesmouth & Cleveland Coast SPA/Ramsar	Darlington Borough Council Durham County Council Eden District Council Hambleton District Council Hartlepool Borough Council Middlesbrough Council North York Moors National Park Redcar and Cleveland Borough Council Richmondshire District Council Stockton-on-Tees Borough Council	Nitrogen
The Broads SAC/Ramsar (only the following are included: <ul style="list-style-type: none"> • Bure Broads and Marshes SSSI • Trinity Broads SSSI • Yare Broads and Marshes SSSI • Ant Broads and Marshes SSSI • Upper Thurne Broads and Marshes SSSI 	Borough Council of King's Lynn and West Norfolk Breckland Council Broadland & South Norfolk Council Great Yarmouth Borough Council North Norfolk District Council Norwich City Council The Broads Authority	Nitrogen and Phosphorus and
West Midlands Mosses SAC (only catchments of Abbots Moss SSSI and Wynbunbury Moss SSSI are included)	Cheshire East Council (Wynbunbury) Cheshire West and Chester Council (Abbots)	Nitrogen and Phosphorus

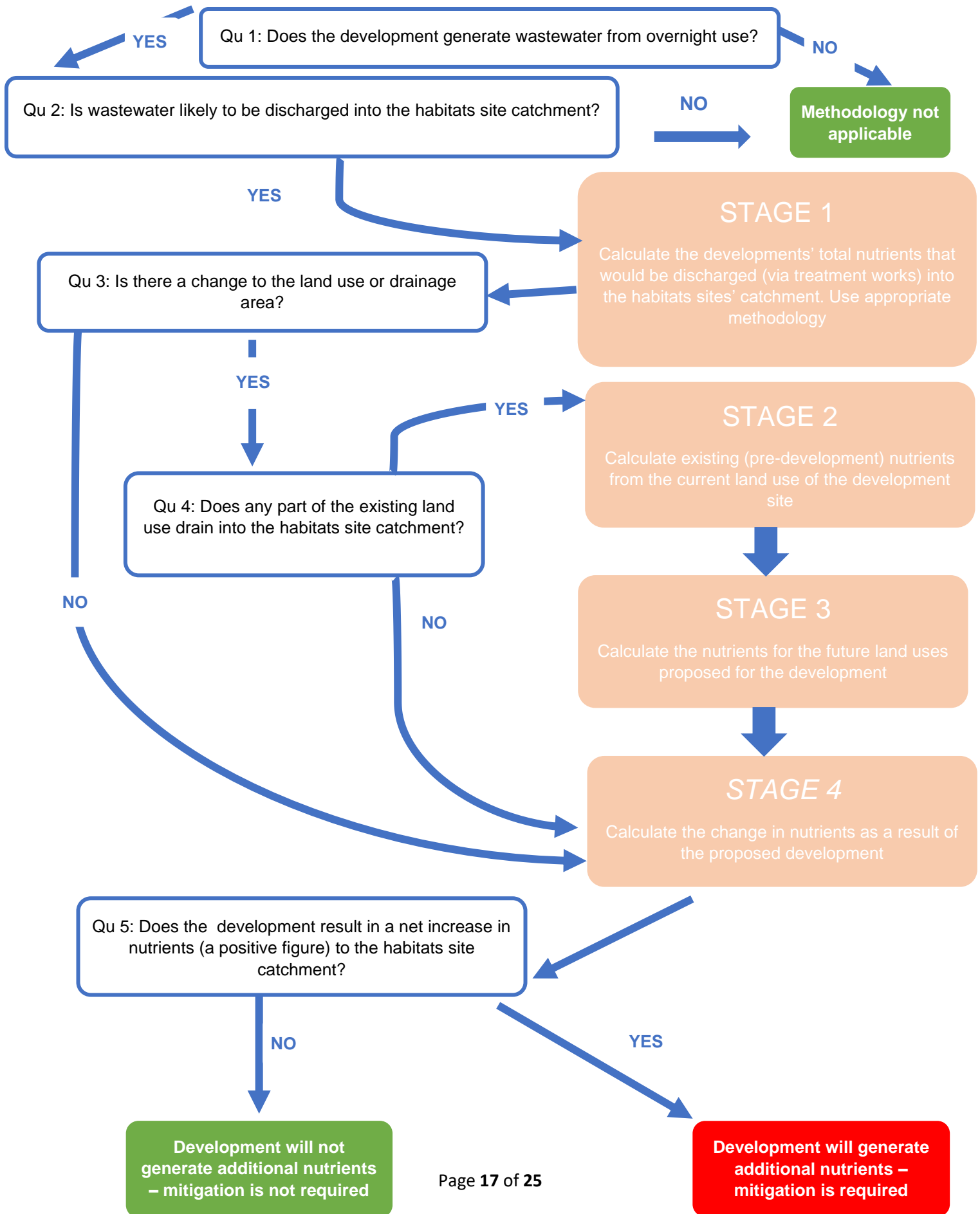
Situations where Nutrient Neutrality may not be an appropriate Mitigation Measure

- Lake or wetland sites and particularly those with long residence times or which have a limited or no outflow. For these types of sites nutrients will accumulate over time and therefore they are particularly vulnerable to even small increases in nutrients which will further hinder restoration. Where one of these sites is already unfavourable due to nutrient enrichment it is also likely that current sources of nutrients will need to be reduced to restore the site and therefore using these measures for nutrient neutrality would undermine the ability to restore the site.
- Where the development impact is direct to a habitats site terrestrial wetland habitat rather than to surface water. In these circumstances the mitigation would need to be

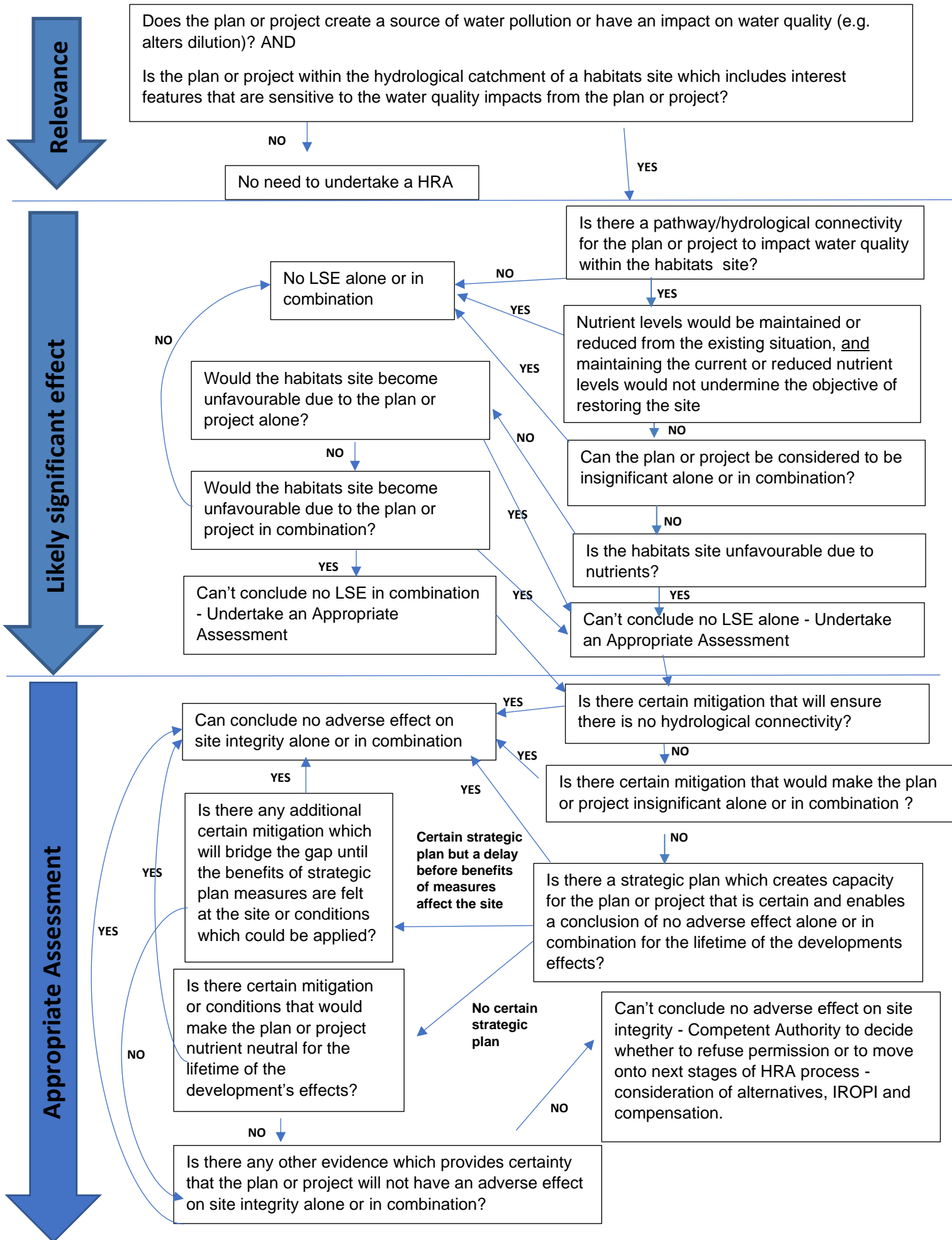
at the exact same location where the development is having its effect on the site, as reductions in nutrients in other locations of the wetland would not neutralise the effect of the development. Therefore, potential mitigation options will likely be very limited.

- Where the development impact is via groundwater discharging direct to a habitats site terrestrial wetland habitat rather than to groundwater discharging to surface water. In these circumstances there will be variation in the effectiveness of measures depending on their location within the groundwater catchment compared to development. This means measures may need to be located in the same part of the groundwater catchment to ensure that it would neutralise the nutrient increase from the development before it reaches the site, thereby constraining the area where mitigation could be targeted to a smaller area.
- Development (particularly larger developments) in the headwaters of a catchment. In these circumstances the area upstream of the development where nutrient neutrality mitigation can be located will be restricted to a small area, providing much more limited and perhaps in some cases no feasible opportunities for mitigation through nutrient neutrality, although other mitigation measures may be possible.
- Habitats sites with small catchments. Again, there will be a much more limited area where mitigation can be targeted thereby limiting potential nutrient neutrality mitigation opportunities.
- Where widespread and/or large-scale uptake of measures are needed to restore the habitats site or part of the site (e.g. identified in the DWPP or NMP) thereby significantly constraining the measures available for counterbalancing additional nutrient inputs in a way which will not undermine site restoration.

Annex D: Nutrient Assessment Methodology for Development which Generates Wastewater Decision Tree



Annex E: Flow Diagram of HRA Process for Consultations Contributing Nutrients



Annex F: Thresholds for Insignificant Effects – Phosphorus Discharges to Ground

Waddenzee established that an Appropriate Assessment (AA) is required where there is a “probability or a risk” of a significant effect on the site concerned. In light of the precautionary principle, a plan or project is likely to have a significant effect if the risk cannot be excluded on the basis of objective evidence. Any site specific rationale or thresholds to demonstrate the insignificance of effects would need to ensure that the risk of Likely Significant Effect (LSE) (alone or in combination) can be excluded. Where evidence is not currently available or it is uncertain, it would be more appropriate to take the plan or project through to AA for further consideration. It may still be possible to conclude no adverse effect on site integrity (alone or in combination) in the AA through further consideration as to the specific facts of the case in question and/or through consideration of appropriate mitigation.

Natural England currently considers that it is difficult to make robust arguments around generic standardised thresholds for levels of water quality impacts that exclude the risk of likely significant effects (alone or in combination) for all sites and situations. There are a number of different factors that are variable between sites which can influence the risk of cumulative effects and the sensitivity and vulnerability of the site and therefore what might be significant.

Thresholds for insignificant levels of phosphorus discharges to ground

Natural England considers that there is an exception to this position on generic thresholds in relation to discharges of phosphorus to ground.

Any plan or project which requires planning permission, Building Regulations approval or an environmental permit from the Environment Agency must comply with the requirements of those regulatory regimes as well as what is needed to meet the Habitat Regulations. For example, all of these regimes require that developments should be connected to the public foul sewerage network wherever this is reasonable. This includes areas where the Habitats Regulations apply and any need to reduce nutrient inputs in those areas should not lead to the installation of non-mains foul drainage systems in circumstances where connection to the public foul sewer would otherwise be considered reasonable. Any plan or project then connecting to mains would still need to also be compliant with Habitat Regulations.

Summary of evidence

Septic tank systems or package treatment plants that discharge to ground via a drainage field should pose little threat to the environment, because much of the P discharged is removed from the effluent as it percolates through the soil in the drainage field¹¹. The risk of water pollution by these types of discharges to ground depends on a range of factors that affect their success or failure and can be summarised by three key factors¹²:

1. improper location
2. poor design
3. incorrect management

¹¹ Robertson WD, Van Stempvoort ER & Schiff SL. 2019. Review of Phosphorus attenuation in groundwater plumes from 24 septic systems.

¹² MAY, L., PLACE, C., O'MALLEY, M. & SPEARS, B. 2015. *The impact of phosphorus inputs from small discharges on designated freshwater sites*. Natural England Commissioned Reports, [NECR 170](#).

Phosphorus is removed from the effluent within the drainage field through retention in the soil through sorption within the aerated soil zone and mineral precipitation. How much phosphorus is removed will depend on the soil type and phosphorus characteristics, mineral content, pH, texture, and the hydraulic loading rate. P sorption can be reversed and P desorption can occur in certain conditions e.g. change in redox conditions¹³. For the drainage field to work effectively the drainage field needs to have acceptable year round percolation rates which will be influenced by the soil type, as if they drain too quickly or too slowly effective phosphorus removal will not take place. In addition if infiltration rates are lower than the loading rate of the effluent into the drainage field then hydraulic failure can occur which results in the effluent being discharged over the soil surface. Therefore correct design of the system is important. The Building Regulations¹⁴ set out design and construction standards for septic tanks, package treatment plants and drainage fields. In relation to drainage fields they include the need for a percolation test, a method for how this should be undertaken and the minimum and maximum percolation values (V_p) which ensure that the drainage field effectively removes pollutants. This is then used to calculate the size of the drainage field required for the size of the household it will be serving.

Robertson et al (2019)⁸ found that the carbonate mineral content of the drainage field sediments can also affect the P retention within the drainage fields and therefore the distance any P plume extends. Calcareous sediments having very high P retention (average 97%), with plumes not extending beyond 10m and non-calcareous sediments showing greater variability and having a lower P retention (average 69%) with some of the P plumes extending beyond 15m up to 100m in one case.

The evidence has shown that it is the aerated drainage field sediments which provides a key function in terms of removing the phosphorus from the effluent before it enters a receiving water body (surface or groundwater). Any enhanced connectivity to a water body, which short circuits this process, is probably one of the main factors that causes pollution of habitats sites (and other water dependent sites) by these systems^{15 16}. Therefore it will be important that the drainage field is sited far enough away from any watercourse, ditch, drain etc. as well as that it is not in a location where the groundwater is high enough that comes into connection with this aerated zone. Fractured rock or fissured geology could also short circuit this process. In addition seasonal flooding can wash out the contents of the tanks. Slope also affects the way the drainage field functions, with steeper slopes having a higher risk of run off.

¹³ Mary G. Lusk, Guralp S. Toor, Yun-Ya Yang, Sara Mechtensimer, Mriganka De

& Thomas A. Obreza. 2017. *A review of the fate and transport of nitrogen, phosphorus, pathogens, and trace organic chemicals in septic systems*, Critical Reviews in Environmental Science and Technology, 47:7, 455-541,

¹⁴ [Building Regulations, Drainage and Waste disposal](#) (2015), Document H, Section H2.

¹⁵ MAY, L., WITHERS, P.J., STRATFORD, C., BOWES, M., ROBINSON, D. & GOZZARD, E. 2015. *Development of a risk assessment tool to assess the significance of septic tanks around freshwater SSSIs: Phase 1 – Understanding better the retention of phosphorus in the drainage field*. Natural England Commissioned Reports, [NECR171](#)

¹⁶ MAY, L., DUDLEY, B.J., WOODS, H. & MILES, S. 2016. *Development of a Risk Assessment Tool to Evaluate the Significance of Septic Tanks Around Freshwater SSSIs*. [NECR 222](#)

There is also some evidence that density (i.e. number) of these types of systems in an area also has a bearing on the risk of pollution. In general, lower densities of tanks tend to cause less contamination of downstream water bodies than higher densities of tanks.

Proposed thresholds

Small discharges to ground i.e. less than 2m³/day¹⁷ that are within the surface or groundwater catchment of a designated site will present a low risk that the phosphorus will have a significant effect on the designated site where certain conditions are met:

- a) The drainage field is more than 50m from the designated site boundary (or sensitive interest feature)¹⁸ **and**;
- b) The drainage field is more than 40m from any surface water feature e.g. ditch, drain, watercourse¹⁹, **and**;
- c) The drainage field in an area with a slope no greater than 15%²⁰, **and**;
- d) The drainage field is in an area where the high water table groundwater depth is at least 2m below the surface at all times²¹ **and**;
- e) The drainage field will not be subject to significant flooding, e.g. it is not in flood zone 2 or 3 **and**;
- f) There are no other known factors which would expedite the transport of phosphorus⁹ for example fissured geology, insufficient soil below the drainage pipes, known sewer flooding, soil/geology type and its ability for P sorption/mineralisation or presence of conditions would cause remobilisation phosphorus, presence of mineshafts, etc **and**;
- g) To ensure that there is no significant in combination effect, the discharge to ground should be at least 200m from any other discharge to ground²².

¹⁷ A limit of 2m³/day is used based on this being the size used for discharges to ground in the General Binding Rules and is representative of the size of the majority of the septic tanks investigated within [NECR171](#), from which most of the criteria are based.

¹⁸ 50m is the distance as which no measurable phosphorus signal was detected at this distance (NECR171 and NECR222). Robertson *et al* (2019) also found that the majority (although not all) of plumes did not extend further than this distance

¹⁹ 40m is the distance that represents a low risk, based on there was a weak phosphorus signal this distance for some of the small discharges (NECR171 and NECR222) This is a slightly less precautionary value than the 50m distance to the Habitats site as there will be the capacity for further attenuation and dilution before the site.

²⁰ 15% is the slope that represents a low risk based on the methodology outlined in NECR222.

²¹ 2m is the groundwater depth that represents a low risk, based on very low levels being detected in soil at depth below this (NECR171 and NECR222)

²² The 200m is based on the 50m distance where no measurable phosphorus signal was detected (NECR171) for each septic tank. So for two drainage field areas not to overlap they need to be at least 100m apart. A safety factor of two is then applied to ensure that in the long term there will be the certainty that the effective drainage field phosphorus retention areas don't overlap. This then also takes account of the greatest distance that Robertson *et al* (2019) found a plume to extend which was 100m to ensure there would be no overlap. It also ensures that the maximum density of these systems is no more than one for every 4ha (or 25 per km²), as identified in NECR170.

A GIS layer is available from NE²³ which looks at conditions b, c and d above only, for the whole of England. Where this layer indicates that there is a low risk, then the three conditions (b, c & d) above can be considered to be met. Where there is a high or medium risk identified, then one or more of the three conditions (b, c & d) will not be met. This GIS layer can be shared with the EA and Local Authorities with the relevant data licence via our GI team, but not with developers due to the terms in the data licence. If site specific monitoring/modelled data is presented for conditions b, c or d which provides greater certainty than the national dataset used to produce the risk map, then this can override the risk map. It may be time consuming and/or costly to undertake site-specific monitoring that provides certainty for some of the conditions such as groundwater depth, due to the inherent variability over time and therefore the need for any monitoring to cover a long enough time period (several years) and to a sufficient frequency to determine the highest groundwater depth. So it is acceptable to rely on modelled or national dataset where these are the best available data and scientifically robust.

To consider the other three conditions (a, e and f) other data sources will need to be considered. Condition a can be looked at through using the designated site data layer²⁴ and calculating the distance from the site boundary. Condition e can use the EA flood risk maps (<https://flood-map-for-planning.service.gov.uk/>). Condition f should make use of any sewer flood data, information on local geology and soils, groundwater phosphorus concentration monitoring within the catchment or other local information which it is readily available. Elevated concentrations of phosphorus in groundwater would indicate phosphorus transport being short circuited e.g. through fissures, that it is not being effectively retained within the drainage field or it is being remobilised. It can be assumed that phosphorus is being effectively retained and not remobilised unless there is existing evidence at the discharge location or within the wider catchment which suggest that this may be occurring in the same conditions to those present at the location of the proposed discharge. Such evidence could include investigations, known soil or geological conditions or groundwater water quality (P) data from similar soil/geological conditions.

As not all of the phosphorus will be retained by the soil, condition g is to ensure that there is no in combination or cumulative effect from a number of these discharges in an area which together could add up to have a significant effect.

If conditions a to g are all met this represents a low risk that phosphate will reach the site, and not zero risk (i.e. not that no phosphorus from the discharge will ever reach the site in all cases). There will be further processes of dilution and attenuation between the drainage field and the site, which will provide further reduction and the current evidence would suggest that the scale of any inputs from these sources would not be significant.

Where best available evidence indicates that these conditions are met, Natural England advice is a conclusion of no LSE alone or in combination for phosphorus can be reached in these circumstances. Where uncertainty remains so LSE cannot be ruled out or evidence exists that there is a risk of phosphate from small discharges to ground causing a significant effect to a designated site (e.g. from SAGIS modelling or monitoring investigations), then Natural England advice is that there is a LSE or LSE cannot be ruled out and an AA should

²³. The dataset LPAs can [request the GIS layer](#) for the England sewage discharge risk map from Natural England. The dataset is called - Small_Sewage_Discharge_Risk_Zone_Map_For_England (Dissolved).

²⁴ The Special Protection Area (England), Potential Special Protection Area (England), Special Areas of Conservation (England), Possible Special Areas of Conservation (England), Ramsar (England) and Proposed Ramsar (England) data layers can be download from [Natural England Open Geodata portal](#)

be undertaken. Where evidence is presented which provides certainty that there will be no LSE even though these conditions are not met e.g. better local information, then Natural England's advice may be no LSE, but would be determined on a case by case basis.

The Competent Authority, as the decision maker, will need to determine whether it agrees with NEs advice.

For developments which allow for increases in the number of people that will be served by an existing discharge to a drainage field, it will be important to consider whether the existing system has sufficient capacity in its design to accommodate the increase, without increasing the risk of pollution.

The evidence underpinning these thresholds will be periodically reviewed and the thresholds will be amended as necessary to take account of any new evidence.

This approach does not apply to nitrogen as it does not get taken up by the soil like phosphorus.

Further work is necessary to review the evidence and determine if it is possible to establish any other generic insignificance thresholds for other development or discharge types. It may also be possible to develop site specific insignificance thresholds.

Annex G: Natural England Area Team Contacts

Habitat Site	Area Team	Area Team Manager	Additional Area Team contact
Oak Mere SAC	Cheshire and Lancashire	Ginny Hinton ginny.hinton@naturalengland.org.uk	Petula Neilson Bond
Rostherne Mere RAMSAR			
West Midlands Mosses SAC			
Estwaite Water Ramsar	Cumbria	Helen Kirkby helen.kirkby@naturalengland.org.uk	Helen Smith
River Derwent & Bassenthwaite Lake SAC			
River Eden SAC			
River Kent SAC			
River Axe SAC	Devon, Cornwall and Isles of Scilly	Wesley Smyth wesley.smyth@naturalengland.org.uk	Denise Ramsay for LPAs in Devon and Simon Stonehouse for LPAs in Somerset
River Camel SAC			Denise Ramsay
Peak District Dales SAC	East Midlands	Vicky Manton victoria.manton@naturalengland.org.uk	Ian Butterfield
River Mease SAC			
River Wensum SAC	Norfolk and Suffolk	Helen Dixon helen.dixon@naturalengland.org.uk	Jack Haynes
The Broads SAC/Ramsar			
Lindisfarne SPA/Ramsar	Northumbria	Christine Venus christine.venus@naturalengland.org.uk	Lewis Pemberton Andrew Whitehead
Roman Walls Loughs SAC			

Teesmouth & Cleveland Coast SPA/Ramsar			
Stodmarsh SAC/Ramsar	Sussex and Kent	James Seymour james.seymour@naturalengland.org.uk	Sue Beale
Solent	Thames Solent	Allison Potts allison.potts@naturalengland.org.uk	Becky Aziz
River Itchen SAC		Please contact the Thames Solent Team for developments in Hampshire and Isle of Wight and the Kent and Sussex Team for developments in Chichester and Wessex Team for developments in Wiltshire.	Becky Aziz
River Lambourn SAC			Amy Kitching
River Avon SAC	Wessex	Rachel Williams rachel.williams@naturalengland.org.uk	Tom Lord
Somerset Levels & Moors Ramsar			
Chesil and the Fleet SAC/SPA			
Poole Harbour SPA Ramsar			
River Clun SAC	West Midlands	Emma Johnson emma.johnson@naturalengland.org.uk	Hayley Fleming
River Lugg (part of River Wye SAC)			
West Midland Mosses SAC			
Hornsea Mere SPA	Yorkshire and Lincolnshire	Paul Duncan paul.duncan@naturalengland.org.uk	Hannah Gooch

APPENDIX 3

Natural England Consultation Response
26 August 2022

From: [Oliver, Louise](#)
To: [PLANNING](#)
Subject: 402509 AMENDMENT 1100 Dwellings @ Anglia Square, Norwich NR3 1DZ (NCC) 22/00434/F
Date: 26 August 2022 04:21:05

CAUTION! This email originates from outside Norwich City Council.

Do not click on any links or open any attachments if you have any doubts about the email - please just delete the email.

Our ref: 402509
Your ref: 22/00434/F

Dear Sir/Madam

Thank you for your email and enclosures consulting Natural England on the amendments that have been submitted in relation to the above proposal. Natural England has no further comments to add to those made in our previous response sent on 15 July 2022 (our ref: 398164).

Yours faithfully

Louise Oliver

Louise Oliver
Lead Adviser – Norfolk & Suffolk Team
Natural England
Dragonfly House
2 Guilders Way
Norfolk NR1 3UB
T: 020802 64893 M: 07920 086653
www.gov.uk/natural-england

I am currently working M-F, 9 am – 2 pm

Please send any consultations to consultations@naturalengland.org.uk

During the current coronavirus situation, Natural England staff are working remotely and from some offices to provide our services and support our customers and stakeholders. Although some offices and our Mail Hub are now open, please continue to send any documents by email or contact us by phone to let us know how we can help you. See the latest news on the coronavirus at <http://www.gov.uk/coronavirus> and Natural England's regularly updated operational update at <https://www.gov.uk/government/news/operational-update-covid-19>.

Wash hands. Cover face. Make space. Fresh Air.

Thriving Nature
for people and planet



We are here to secure a healthy natural environment for people to enjoy, where wildlife is protected and England's traditional landscapes are safeguarded for future generations.

We now offer free and chargeable advice to land owners and managers planning works on Sites of Special Scientific Interest through [SSSI Advice Service](#).

To help developers consider the environment Natural England offers two chargeable services:

- the [Discretionary Advice Service \(DAS\)](#), which can provide advice on planning/licensing proposals;
- the [Pre-submission Screening Service \(PSS\)](#) for European Protected Species mitigation licence applications.

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APPENDIX 4

Natural England Consultation Response
23 September 2022

Date: 23 September 2022
Our ref: 405997
Your ref: 22/00434/F



planning@norwich.gov.uk

BY EMAIL ONLY

Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 060 3900

Dear Ms Armitage

Planning consultation: Shadow Appropriate Assessment Provided

Location: Anglia Square Land N and W Edward Street, Norwich, Norfolk NR3 1DZ

Thank you for your consultation on the above dated 07 September 2022 which was received by Natural England on the same date.

The advice in this letter is based on the information provided within:

- Shadow Habitats Regulations Assessment (Ecology Solutions, August 2022)
- Meeting between Natural England, Norwich City Council, Weston Homes and Ecology Solutions on 16 September 2022

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Recreational disturbance advice

The Shadow Habitats Regulations Assessment (sHRA) provided by the applicant concludes that it is possible to rule out the likelihood of significant effects arising from the proposal when considered alone.

On the basis of the information provided, it is the advice of Natural England that **it is not possible** to conclude that the proposal is unlikely to result in significant effects alone on the European site(s) in question.

Natural England advises that the assessment currently does not provide enough information and/or certainty to justify the assessment conclusion and that your authority should not grant planning permission at this stage.

Natural England has provided advice on a previous version of this development (planning ref: 18/00330/F). Since then, we have provided additional advice to Local Planning Authorities on the recreational disturbance impacts arising from new housing development, and the Norfolk GIRAMS has been adopted by your authority. Our Interim Advice letter (dated 12 August 2019, our ref: 25769) states that "it will be anticipated that any new residential development within an identified zone will constitute a likely significant effect on the sensitive interest features of the above designated sites through increased recreational pressure, either when considered 'alone' or 'in combination'. This is confirmed in the Norfolk GIRAMS report (Place Services, March 2021) which also states that mitigation for recreational impacts from individual developments alone must be provided on/near the development site in the form of Green Infrastructure (GI).

It is, therefore, Natural England's advice that further provision of GI, either within or near to the development, is required to mitigate the impacts arising from this development alone. Further advice on GI is provided below to aid the developer in providing adequate mitigation.

Where there is a likelihood of significant effects (excluding any measures intended to avoid or reduce harmful effects on the European site), or there are uncertainties, a competent authority should undertake an appropriate assessment in order to fully assess the implications of the proposal in view of the conservation objectives for the European site(s) in question.

Natural England therefore advises that an appropriate assessment should now be undertaken, and the following information is provided to assist you with that assessment. Natural England must be consulted on any appropriate assessment your Authority may decide to make.

On-site greenspace

The Norfolk GIRAMS report states that "GI is necessary at the local (development site) level, to be secured by the LPA at the application stage and strategic level (Local Plan making) level to divert and deflect visitors from the Habitats Site." Natural England currently considers that the provision of GI within the development is inadequate for this purpose.

In considering whether adequate greenspace has been provided within the development boundary, you may find it useful to consider the [Urban Greening Factor](#) (UGF). Typically, a development of this nature should aim for a score of 0.4 or more. Some factors which improve the UGF score include flower-rich perennial planting, semi-natural vegetation and rain gardens (amongst others). Natural England considers that there is significant scope for provision of these features to improve on-site GI while greening paths throughout the development and providing additional green spaces for residents to spend time outside.

As discussed in our previous advice (dated 15 July 2022, our ref: 398164), management of GI is an important part of ensuring that the delivered green space can be considered as mitigation for recreational disturbance. It is Natural England's advice that ongoing management and monitoring should be secured through an appropriately worded condition.

Natural England advises that the consideration and implementation of appropriate and proportionate mitigation measures to offset potential impacts to designated sites will be in line with the Greater Norwich Green Infrastructure Delivery Plan (GIDP) and Local Plan policies DM3, DM6 and DM8, as well as the emerging Greater Norwich Local Plan (Policy 3). In addition, provision of high quality GI will contribute towards mitigating the impacts of climate change such as flooding and urban heat island effect, thereby contributing towards meeting policies such as DM1 and DM5 of your Development Management Policies Local Plan.

Off-site greenspace

Improving the provision of on-site greenspace should be considered in the first instance. However, Natural England recognises the constraints in providing large areas of open green space within the development itself. Therefore, provision and enhancement of, and access to, GI off-site should also be considered. This has been achieved for housing developments in Ipswich where additional funding was secured to contribute towards measures such as improving and maintaining footpaths to existing green space within the city, promoting and publicising canal side walks including information boards, improved seating and installation of bins. You may wish to contact Ipswich Borough Council for further details of how these were secured. Similar measures have been proposed by EDF for the recreational disturbance arising from construction workers and displaced people from works for the Sizewell C NSIP. Further information on what has been proposed can be found [here](#).

The sHRA has identified public greenspaces currently available within the city of Norwich, that may act to draw residents away from European sites. The majority of these sites identified are over 1km away from the development and an assessment of the attractiveness and capacity of these greenspaces to act as an alternative to visiting European designated sites for residents of the development has not been undertaken. A financial contribution may be required to improve

footpaths and recreational access to some of these sites such as Mousehold Heath and Gildencroft Park. The ongoing management of existing green spaces could also be aided through financial contributions to the organisations responsible for their management. Additional measures could include improved signage and promoting of walks and greenspace that draw residents away from designated sites.

In-combination impacts

The Shadow Habitats Regulations Assessment has concluded that there is potential for the development to contribute to an in-combination effect when considered alongside other plans projects. At the appropriate assessment stage, a financial contribution of £204,523 (£185.93 x 1,100) towards the Norfolk Green Infrastructure and Recreational Impact Avoidance and Mitigation Strategy (GIRAMS) is proposed as mitigation. Natural England agrees that this is sufficient to mitigate for in-combination impacts, should the alone impacts be appropriately considered as outlined above.

Water quality advice

Natural England acknowledge that Norwich City Council are working with Royal HaskoningDHV and the applicant to identify Nutrient Neutrality mitigation options for the development and that this work is ongoing. In addition, that in calculating the nutrient budget for the development, the bespoke Norfolk Calculator will be used in place of the Natural England NN calculator. Natural England has not seen a final version of the Norfolk calculator and has not provided formal comments on the bespoke Norfolk calculator.

To assist in the preparation of the Shadow HRA and the NN calculator, it is our advice that the land use category for the new land use type (Stage 3 of the calculator) is selected as 'Residential Urban Land'. It is not considered that the other 'urban' land use types are applicable in this instance for this development.

Furthermore, any deviation in the average water usage per person figure within the calculator from the expected RHdhv value of 110 l/day to a lower figure would not be subject to the formal comments from Natural England that are expected to be prepared once the Norfolk calculator has been finalised and Natural England informed.

Should the applicant wish to discuss the further information required and scope for mitigation with Natural England, we would be happy to provide advice through our [Discretionary Advice Service](#).

Please consult us again once the information requested above, has been provided.

Yours faithfully

Joanna Parfitt
Norfolk and Suffolk Team

APPENDIX 5

Natural England Letter on Nutrient Neutrality
Calculator 7 October 2022

7 Oct 2022

Our ref: Norfolk Nutrient calculator response



FAO: Heads Planning, Development Management and Planning Policy

By email only

Dragonfly House
2 Gilders Way
Norwich NR3 1UB

Dear Sir/Madam

Consultation: Norfolk Nutrient Budget Calculator (Developed by Norfolk LPAs and Royal Haskoning)

Thank you for your email of 23 September from Trevor Wiggett, consulting Natural England on the nutrient budget calculator that the Norfolk Authorities have developed with support from Royal Haskoning, hereafter referred to as the 'Norfolk calculator'.

Natural England notes that the approach adopted in the Norfolk calculator is broadly consistent with that which underpins the Natural England nutrient budget calculator. This response therefore focusses on the elements of the Norfolk calculator for which a different approach, or different figures have been used.

Following a review of the information shared with Natural England, there are three elements of the Norfolk calculator where the approach differs from that in the Natural England calculator:

1. Occupancy rates
2. Water usage
3. WwTW discharge concentrations

Detailed comments and advice regarding the three aforementioned elements are set out below.

Occupancy rates:

As set out in the Natural England Nutrient Neutral Generic Methodology and the Natural England Calculator Guidance document; "Competent authorities must satisfy themselves that the residents per dwelling/unit value used in this step of the calculation reflects local conditions in their area. The residents per dwelling value can be derived from national data providing it reflects local conditions. However, if national data does not yield a residents per dwelling/unit value that reflects local occupancy levels then locally relevant data should be used instead. Whichever figure is used, it is important to ensure it is sufficiently robust and appropriate for the project being assessed."

The Norfolk calculator also includes a separate occupancy rate for houses with multiple occupancy (HMO) and for hotels/guest houses to be used when there is development with an additional number of rooms above six residents. For hotels/guesthouse developments, the calculator additionally allows for a bespoke

figure of number of weeks occupied per year and an average occupancy rate (0-100%). There is no information in the ORS report to explain how these figures have been derived, or to support using a different occupancy rate for HMOs/tourist accommodation. The Royal Haskoning report indicates that the average occupancy rate for hotels and HMOs comes from the Dorset Heaths SPD. This SPD specifies a 1.65 occupancy rate for 'flats' but with no detailed information as to how this has been derived.

Natural England would advise that suitable provisions should be put in place to ensure that should hotels/guesthouses revert to residential accommodation in the future, there is a mechanism to assess the potential for any resulting change in nutrient load. We would further advise that the number of weeks per year use, and average occupancy of hotels and tourism accommodation should be adequately evidenced to provide the necessary certainty required for Appropriate Assessment.

Natural England therefore support the use of locally relevant data to derive an appropriate occupancy figure for Norfolk. The Norfolk Authorities, as competent authority must be satisfied that the evidence underpinning the occupancy rate in the Norfolk calculator is sufficiently robust and appropriate. We would recommend that project level Appropriate Assessments which are informed by the Norfolk calculator specifically include justification for why the competent authority has decided upon the occupancy rate that has been used.

We would also recommend the Norfolk Authorities review the comments made by Justice Jay at the High Court in the Wyatt v Fareham Judicial Review, regarding the use of occupancy rates which are appropriate to the type of development being permitted.

Water Usage:

The Natural England methodology and calculator recommends the addition of 10 litres per person, per day to the Building Regulations standard being applied to the planning permission (e.g. 110 litres per person, per day). The Norfolk calculator has removed this additional 10 litres per person, per day and relies on the Building Regulations standard which is secured as part of the planning permission.

The Norfolk Authorities have referenced a study to support the removal of the additional 10 litres per person, per day. It is noted that this study is of homes built to the 125 litres per person, per day standard, rather than 110 litres. We would highlight that Natural England's methodology was informed by the analysis by Waterwise of homes in London built to a stricter 105 l/person/day under the Code for Sustainable Homes which showed that actual water usage ranged between 110 to 140.75 litres per person, per day, depending on the occupancy rates (<https://www.waterwise.org.uk/knowledge-base/advice-on-water-efficient-new-homes-for-england-september-2018/>).

Natural England advise that the removal of the additional 10 litres per person, per day makes the Norfolk calculator less precautionary than the approach set out in the Natural England methodology, and the Natural England calculator.

WwTW discharge concentrations:

The Norfolk calculator uses a hybrid approach of retaining the Natural England methodology for Waste-water Treatment Works (WwTW) with high levels of anticipated new connections, and current discharge concentrations with an additional precautionary uplift for WwTW with lower levels of anticipated new connections.

Water companies can increase the concentration of nutrients in the waste-water discharged from WwTW up to the level set in their Environment Agency permit without the requirement for any new consent or consultation. Therefore, the Norfolk Authorities must be satisfied that the figures used in the Norfolk calculator do not risk underestimating the nutrient load of new development connecting to WwTW with lower levels of anticipated growth. It is important to recognise that when undertaking an Appropriate Assessment, potential impacts need to be considered over the lifetime of the development proposal.

For WwTW which do not benefit from a discharge permit with a defined maximum nutrient concentration, the Norfolk calculator uses 6mg/litre for Total Phosphorus, and 25mg/litre for Total Nitrogen. We note that these are the national average values used by the Environment Agency for their planning purposes.

However, as these values represent the national average, there will be a variation in WwTW performance with some performing better, and others worse than this figure.

Natural England advise that the reduction (by 2mg/litre) in the values used in the Norfolk calculator for WwTW without a defined maximum nutrient concentration makes the Norfolk calculator less precautionary than the approach set out in the Natural England methodology, and the Natural England calculator.

The Norfolk calculator includes future discharge concentration values for WwTW which have upgrades planned as part of the Periodic Review (PR) process. This is consistent with the approach set out in the Natural England methodology, and the approach taken for the Natural England calculator. The Norfolk calculator also incorporates the Technically Achievable Limit (TAL) figure from 2030 (0.25mg/litre for Phosphorus and 10mg/litre for Nitrogen) which was announced as a requirement for water companies in nutrient neutrality areas by Defra Secretary of State in July 2022.

The announced requirement for water companies to achieve TAL will be legislated through the Levelling-up and Regeneration Bill. Natural England advise that until the Bill receives Royal Assent the requirement for TAL cannot be considered certain. We recommend that the pre-2030 figure is used to determine the mitigation requirement for new development until the legislation securing the requirement for water companies to achieve TAL is in place.

Summary of Natural England's Advice

As set out above, Natural England considers the Norfolk calculator to have reduced the level of precaution in the nutrient budget calculation in comparison to the methodology and calculator we have produced. A reduction in the level of precaution in the nutrient budget calculation will have a corresponding increase in the potential for the mitigation delivered to be insufficient to fully address the potential for adverse effect to the Broads SAC, and River Wensum SAC.

Natural England accepts that it is the decision of the Norfolk Authorities, as Competent Authority to determine the approach (and associated calculations) taken to Appropriate Assessment of new development proposals. We therefore recommend that the Authorities take legal advice to ensure the approach taken to inform Appropriate Assessment of new development proposals is robust and not open to legal challenge.

Natural England do not intend to raise objection to the Norfolk Authorities using the Norfolk calculator to inform their Appropriate Assessments, other than the specific inclusion of the TAL figure for WwTW from 2030 onwards. As highlighted, the 2030 upgrades are not yet in legislation and therefore cannot be considered sufficiently certain to form the basis of a nutrient budget for new development proposals. Therefore, any Appropriate Assessment which relies on these figures, in advance of the relevant legislation being in place, would lead to an objection by Natural England.

Consultation responses to Appropriate Assessments relating to nutrient neutrality, which do not rely on the TAL figure from 2030 will include the following advice from Natural England:

Natural England notes that the Authority's own calculator has been used to calculate the nutrient budget for this application. This calculator deviates from the Natural England nutrient neutral methodology. As set out in our letter dated 7 Oct 2022 your Authority must be satisfied that the calculator is based on robust evidence and takes a suitably precautionary approach.

I hope this information is helpful, please contact my colleague Helen Dixon in the first instance if you wish to discuss further helen.dixon@naturalengland.org.uk

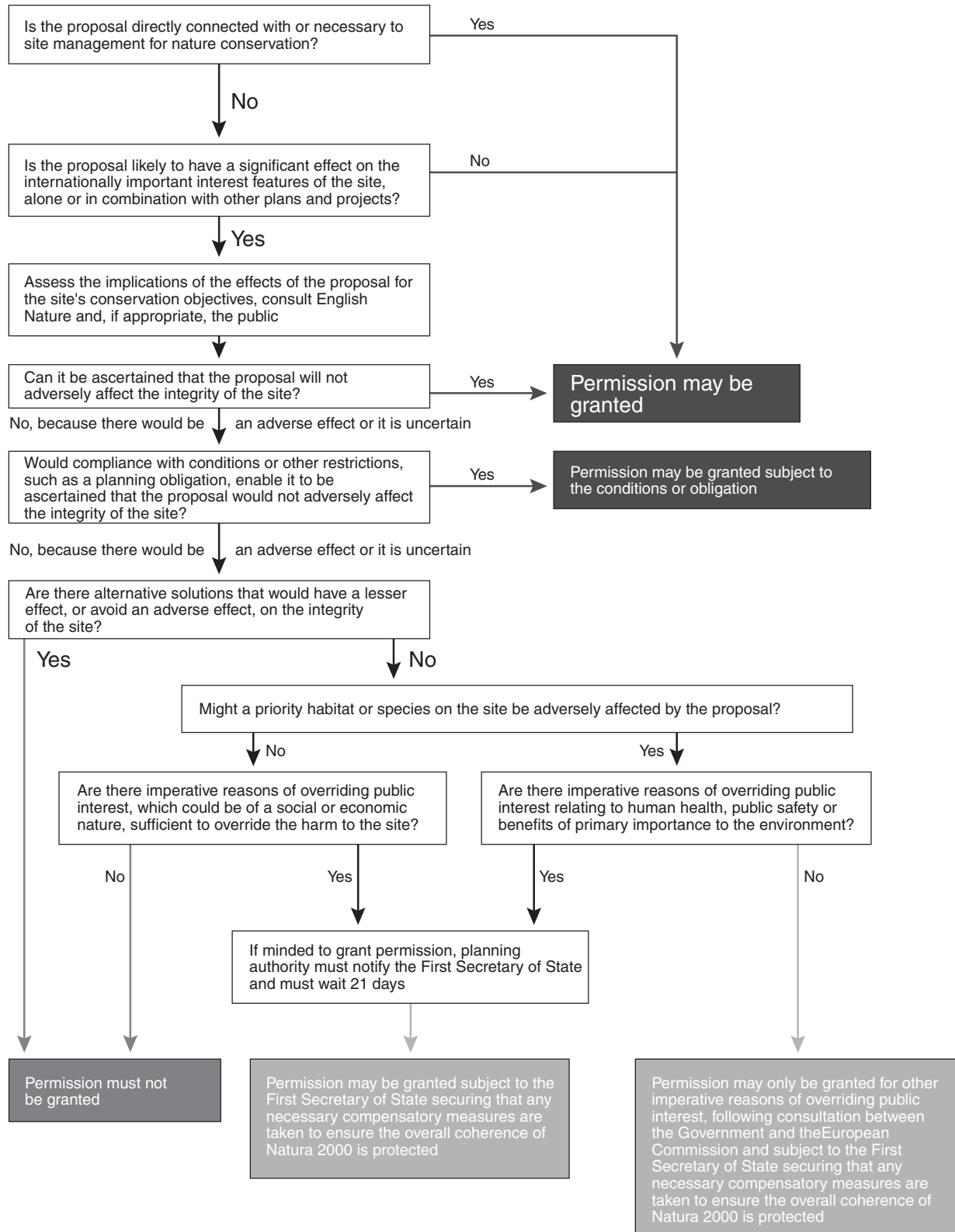
Yours faithfully

Simon Thompson
Principle Adviser – Strategic Solutions
Strategy and Government Advice

APPENDIX 6

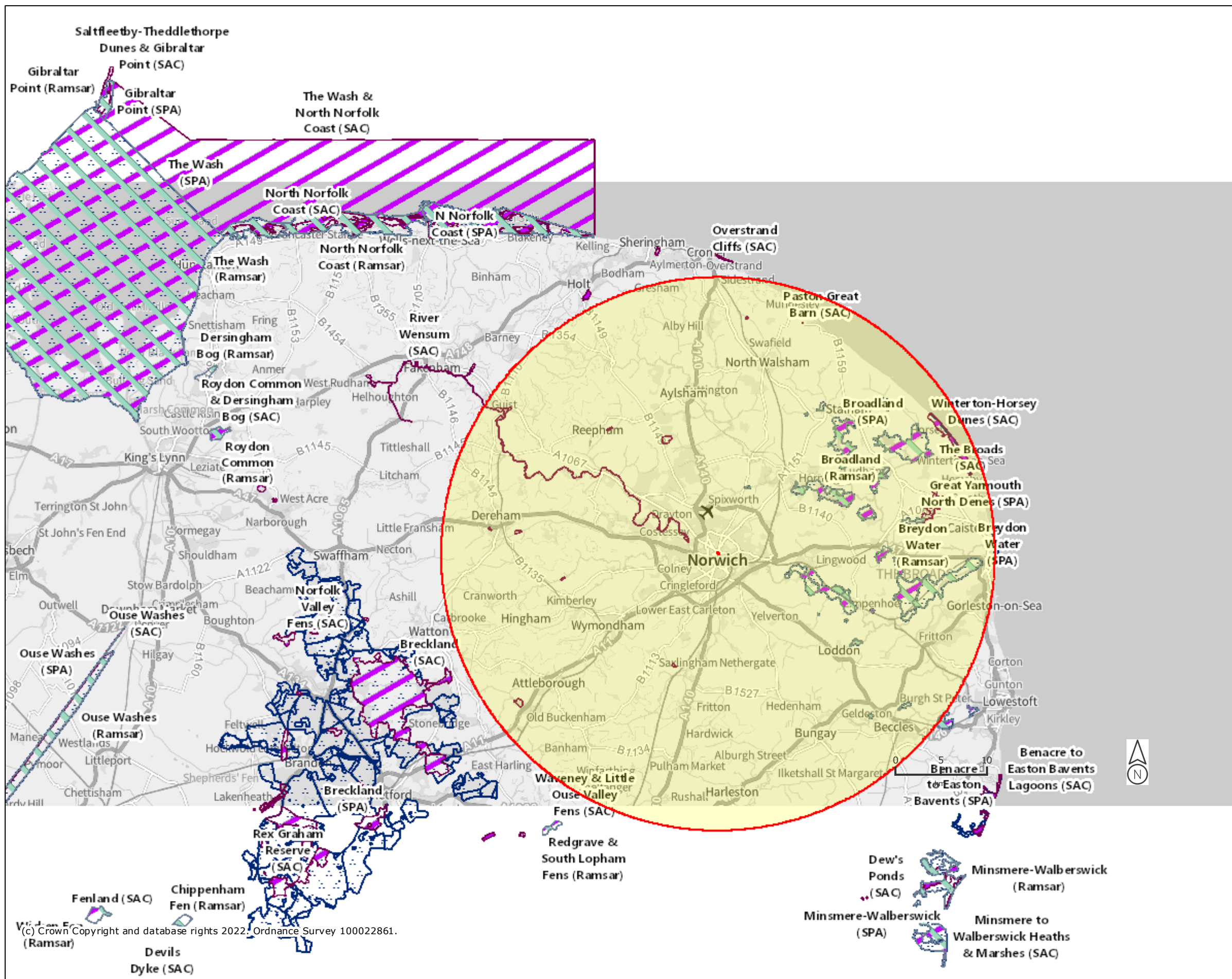
Flow Diagram from ODPM / Defra Circular

Figure 1: Consideration of development proposals affecting Internationally Designated Nature Conservation Sites



APPENDIX 7

Information downloaded from Multi-Agency
Geographic Information for the Countryside (MAGIC)



Legend

-  Ramsar Sites (England)
-  Special Areas of Conservation (England)
-  Special Protection Areas (England)

Projection = OSGB36
 xmin = 542100
 ymin = 281900
 xmax = 683500
 ymax = 349900

Map produced by MAGIC on 29 August, 2022.
 Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGIC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.

APPENDIX 8

Extract on Ecology from Supplementary
Environmental Information (SEI)
– Icení Projects, 2018



Anglia Square, Norwich

Supplementary Environmental Information

Iceni Projects on behalf of Weston

Homes Plc and Columbia

Threadneedle

Author Name: Eilish Smeaton

August 2018

Iceni Projects Ltd

Flitcroft House 114-116 Charing Cross Rd, London WC2H 0JR

T 020 3640 8508 F 020 3435 4228 W iceniprojects.com

CONTENTS

- 1 - Introduction**
- 2 - Environmental Impact Assessment Methodology**
- 3 - Description of Site and Background**
- 4 - Proposed Development and Alternatives**
- 5 - Construction Methodology and Programme Chapter**
- 6 - Highways, Traffic and Transport**
- 7 – Built Heritage**
- 8 - Archaeology**
- 9 - Noise**
- 10 - Air Quality**
- 11 - Socio Economic**
- 12 - Ecology**
- 13 - Townscape and Visual**
- 14 - Cumulative Effects, Impacts and Mitigation**

TECHNICAL APPENDIX

Chapter 1 Introduction

Appendix SEI 1.6 Revised Parameter Plans

Chapter 2 Environmental Impact Assessment Methodology

N/A

Chapter 3 Description of Site and Background

N/A

Chapter 4 Proposed Development and Alternatives

Appendix SEI 4.2 Revised Illustrative Masterplan Layout

Appendix SEI 4.3 Alternative CT scheme illustrative layout

Chapter 5 Construction Methodology and Programme Chapter

N/A

Chapter 6 Highways, Traffic and Transport

Appendix SEI 6.2 Transport Assessment Addendum

Chapter 7 Built Heritage

Appendix SEI 7.3 Addendum to Built Heritage Statement (BOUND SEPARATELY)

Appendix SEI 7.4 Compendium of Verified Views Addendum

Chapter 8 Archaeology

N/A

Chapter 9 Noise

Appendix SEI 9.2 Noise Assessment Update and Response to Consultee Comments

Chapter 10 Air Quality

Appendix SEI 10.2 Air Quality Assessment Version 2 Addressing NCC Comments

Chapter 11 Socio Economic

Chapter 12 Ecology

Appendix SEI 12.1 Dog Licence Data

Chapter 13 Townscape and Visual

Appendix SEI 13.2 Townscape and Visual Impact Assessment Addendum (BOUND SEPARATELY)

Chapter 14 Cumulative Effects, Impact and Mitigation

N/A

TABLES AND FIGURES

Chapter 1 Introduction

N/A

Chapter 2 Environmental Impact Assessment Methodology

SEI Table 2.1 list of prevised parameter plans

Chapter 3 Description of Site and Background

N/A

Chapter 4 Proposed Development and Alternatives

SEI Table 4.1 Summary of Alternative Scenarios

Chapter 5 Construction Methodology and Programme Chapter

N/A

Chapter 6 Highways, Traffic and Transport

N/A

Chapter 7 Built Heritage

SEI to table 7.4: Scoped in Designated and Non-Designated Heritage Assets within Baseline Study

Addendum to Table 7.5: Potential Construction Effects on Designated and Non-Designated Heritage Assets

Updates to Table 7.6: Potential Operational Effects on Designated and Non-Designated Heritage Assets

Chapter 8 Archaeology

N/A

Chapter 9 Noise

N/A

Chapter 10 Air Quality

N/A

Chapter 11 Socio Economic

SEI Table 11.1 Estimated Employment Generation of the Development (Gross)

SEI Table 11.2 Assessment of the Development (Prior to Mitigation)

Chapter 12 Ecology

N/A

Chapter 13 Townscape and Visual

SEI Table 13.1 Supplementary Summary of Effects Table on Townscape and Visual Receptors (Viewpoints)

SEI Table 13.2 Supplementary Summary of effects table on townscape and visual receptors (Character Areas)

Chapter 14 Cumulative Effects, Impact and Mitigation

N/A

12. ECOLOGY

- 12.1 Chapter 12 of the Original ES provided an assessment of the likely effects on European Designated Sites (confirmed by NCC in their Scoping Opinion dated 16 February 2018). Due to the limited onsite ecological value of the Site, a standalone Phase 1 Habitats Survey was submitted, (outside of the Environmental Statement (ES)) which addressed onsite ecology.
- 12.2 Whilst the findings of the Ecology chapter of the Original ES remain valid, this chapter provides supplementary information on the NPPF, July 2018 and provides a response to comments raised by Natural England (NE) on appropriate and proportionate mitigation in relation to potential impacts on the River Wensum Special Area of Conservation, the Broads Special Area of Conservation and the Broadland Special Protection Area (collectively for the purpose of this chapter 'EU designated sites').

Update to Planning Policy

- 12.3 The legislation and planning policy set out in the Original ES remains largely valid. However, it should also be noted that following submission of the Original ES, the Government has published its updated National Planning Policy Framework (NPPF) in July 2018. The updated version of the document includes different paragraph numbers to the 2012 version of the NPPF, additional policies, and updates to the text of certain policies. However, having reviewed the revised document in detail, we do not consider that these updates have a material impact on the assessment of the application proposals or the conclusions as set out in the Original ES, however, for clarity, we provide the relevant NPPF policies:
- 12.4 Paragraph 117 states that *planning policies and decisions should promote an effective use of land in meeting the need for homes and other uses* and should:
- *give substantial weight to the value of using suitable brownfield land within settlements for homes and other identified needs, and support appropriate opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land;*
 - *promote and support the development of under-utilised land and buildings, especially if this would help to meet identified needs for housing where land supply is constrained and available sites could be used more effectively.*
- 12.5 Paragraph 170 states that “*planning policies and decisions should contribute to and enhance the natural and local environment by:*

- *protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils;*
- *minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
- *minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
- *preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*
- *remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.*

12.6 Paragraph 172 states that great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and the Broads.

Impact and Mitigation on the European Designated Sites

12.7 Natural England (NE) commented that further consideration of the implementation of appropriate and proportionate mitigation measures to offset potential impacts to designated sites, in line with the Greater Norwich Green Infrastructure Delivery Plan (GIDP) and Local Plan policies DM3, DM6 and DM8 should be provided.

12.8 The Greater Norwich Infrastructure Plan provides a programme for the funding and delivery of the key infrastructure requirements required for the delivery of strategic infrastructure to support growth, a high quality of life and an enhanced natural environment. At paragraph 3.3 it states that the projects in the GNIP are based on the need to mitigate the potential impacts on Natura 2000 sites under the Habitat Regulations and an understanding of the timing of development served by the identified green infrastructure corridors.

12.9 The Local Plan policies DM3, DM6 and DM8, also focus on Green Infrastructure. Most relevant is DM6 which states:

“Development will be expected to take all reasonable opportunities to avoid harm to and protect and enhance the natural environment of Norwich and its setting, including both sites and species, taking particular account of the need to avoid harm to the adjoining Broads Authority area and other identified areas of natural environmental value immediately adjoining the City. Appropriate proposals which deliver significant benefits or enhancements to local biodiversity or geodiversity will be strongly supported and encouraged. Opportunities should be taken to incorporate and integrate biodiversity, green infrastructure and wildlife friendly features in the design of individual schemes.

Where, in exceptional circumstances, development is accepted which is likely to result in substantial and unavoidable harm to or loss of priority habitats and species populations identified through local biodiversity action plans, developers will be required to provide for the re-creation and recovery of such populations through biodiversity offsetting.”

- 12.10 The Proposed Development accords with this policy, it is a comprehensive redevelopment design, which includes many landscape features that not only increase the biodiversity of the whole Site but also link it with all adjacent land, where it is possible to do so, to create connectivity through this part of Norwich. The supplementary landscape masterplan, (in particular the Illustrative Landscape Masterplan (PL1581-GA-001)) provides an update on how the landscape proposals have evolved in response to consultee comments. The Proposed Development now includes a public Play Trail, further details on the canopy within Anglia Square, as well as a developed biodiversity strategy across the site.
- 12.11 In addition, the water feature has been relocated from Anglia Square and into St. George's Square to provide focus. Pitt Street has a shared pedestrian and cycle route introduced, providing cyclists and alternate route to navigate around the development if desired. To accommodate these changes, the swale has been removed and a wildflower edge has been retained with additional tree planting to provide greater biodiversity benefit.
- 12.12 A Biodiversity Strategy is included within the Landscape Document setting out how the ecological enhancements can be achieved on the site, which includes Biodiverse roofs, green walls and wildflower corridors.
- 12.13 Not only do these changes increase the opportunity for biodiversity enhancements on the Site, it also provides more recreational spaces which would be used by the residents of the Proposed Development reducing the need to travel off site for recreational purposes.
- 12.14 Natural England (NE) acknowledge the provision of roof gardens incorporated into the design of the application, but they state that due to size and location, this space may not be conducive to all

common recreational activities, and it is likely that residents, including dog walkers, will utilise accessible open space offsite, including designated sites.

- 12.15 Of particular concern to NE is the potential for increased recreational pressure on EU European Sites, particularly dog walkers.
- 12.16 The impact of dogs, particularly the disturbance of ground-nesting birds is well documented, especially in the Surrey and Thames Heathland areas (which is a comparable area), and the impact of dogs is an issue that has to be addressed in that area which has a significant amount of heathland, with qualifying ground-nesting species of avifauna.
- 12.17 NE's quantum of dogs assumes 375 dogs equating to 375 or 750 daily walks. However, it is considered that this over inflated. Weston Homes have researched dog ownership across their developments which provides an accurate estimate of ownership from which potential impact can be assessed, Copy included at **Appendix SEI 12.1**.
- 12.18 The results differ significantly from those of NE. In order for an occupant of a Weston Homes development to own a dog and keep it at the property, a licence must be applied for. Thus, the data provided is based on dog licences granted for occupiers of Weston Homes developments over a 10-year period.
- 12.19 In short, the data demonstrates that of a total of 2,333 flats, only 35 (1.5%) have a dog licence. Using the actual percentage of units within each of these schemes which have a dog, the average percentage of flats with a dog licence is 3.68%. Applying this ratio to the upper parameters of the Proposed Development would result in a total of 49 dogs within the entire scheme, this means no more than 100 dog walks per day, which is far below the estimate of Natural England.
- 12.20 It is most likely that the dogs will be exercised in the local area of Anglia Square, and thus the impact on the SPAs - especially the Broads, is likely to be far less than suggested. This is presumably why the Broads Authority has confirmed in their consultation response letter dated 25 April 2018 that it has no objection to the scheme. Indeed, the Broads Authority states:

"The site is remote from the area of the Broads within Norwich and the proposal is unlikely to have a significant impact on the Broads"

Appropriate and Proportionate Mitigation

- 12.21 A recognised means of mitigating potential detrimental effects the EU Sites through increased visitor pressure is through the provision of additional open/green space in close proximity to a new residential development. As set out above, the revised landscape strategy provides a range of open

spaces to be for recreational purposes without the future residents having to travel to these designated areas.

- 12.22 The Development Proposals will deliver cycling and walking (potentially could be used for dog walking also) within the Site. Furthermore, the scheme design will not provide any direct links to the EU designated sites.
- 12.23 A Homeowner's Information Pack could be provided to future residents which would promote the use of alternative dog walks in less sensitive areas. The pack would provide new homeowners' with information on the sensitivities of the EU designated sites, the need to keep dogs on a lead and alternative recreation resources in the local area.

Conclusion

- 12.24 The overall conclusion set out at Chapter 12 of the Original ES remains valid. It is considered that the Proposed Development would not be likely to give rise to a significant effect on the EU designated Sites.
- 12.25 The changes to the Proposed Development includes landscape features that not only increase the biodiversity of the Site but will also provide more recreational spaces which could be used by the residents of the Proposed Development reducing the need to travel off site for recreational purposes.
- 12.26 The potential impact of dogs, particularly disturbance of ground-nesting birds through increased recreational use of the EU designated sites has been considered and is likely to be significantly less than that outlined by NE. However, measures such as the provision of a Homeowners Information Pack outlining the sensitivities of these designated sites and alternative walking areas is likely to further reduce the potential for dog walkers to use these areas.
- 12.27 It is considered that the provision of the mitigation set out above are appropriate and proportionate mitigation measures to offset potential impacts to designated sites.

APPENDIX 9

Schedule of Pet Licences for Dogs

Schedule of Pet Licences for Dogs, by households in Weston Homes' Apartment Developments where dogs are present

Date Prepared: 30.05.18

WH Number	Property name	Location	Number of apartments	Number of apartments with dog pet licence	Percentage of apartments with dog pet licence
WH112	The Meads	MEAD LANE, HERTFORD SG13 7AP	130	5	3.80%
WH106	Morello Quarter	CHERRYDOWN EAST, BASILDON, ESSEX SS16 5AQ	426	5	1.17%
WH120	Pembroke Place	MATCHAM PLACE 7-9 PEMBURY ROAD, WESTCLIFF ON SEA, ESSEX, SS0 8FG	18	1	5.60%
WH132	Charter Place 1-14 Sanders Place	204-206 CAMP ROAD, ST ALBANS, HERTS AL1 5HQ	14	1	7%
WH146	Dukes Hall, Park View	DUKE'S HALL, MAYGREEN CRESCENT, HORNCHURCH, ESSEX RM11 1EJ	58	6	10.30%
WH154	Stratford Riverside	RIVER HEIGHTS, 90 HIGH STREET, LONDON E15 2FA	202	2	1.00%
WH136	Evron Wharf	HERTFORD, HERTFORDSHIRE	182	4	2.20%
WH162	Grand Central, Rustat Road	LAND AT RUSTAT ROAD, CAMBRIDGE, CB1 3QR	216	2	0.93 %
WH158	Middlestons Row	TISSIMANS COURT, BASBOW LANE, BISHOPS STORTFORD, HERTFORDSHIRE CM23 2TW	12	1	8%
WH167	Precision	TELEGRAPH WORKS, ENDERBY WHARF, CHRISTCHURCH WAY, GREENWICH SE10 0AG	250	5	2.00%
WH166	Highbanks House	ESSEX HOUSE, SOUTHCHURCH AVENUE, SOUTHEND, ESSEX SS1 2LB	97	2	2.06%
WH160	Langley Square	DARTFORD, KENT	728	1	0.14%
		Total:	2333	35	1.50%
		Average Number of dogs per development:			3.68%

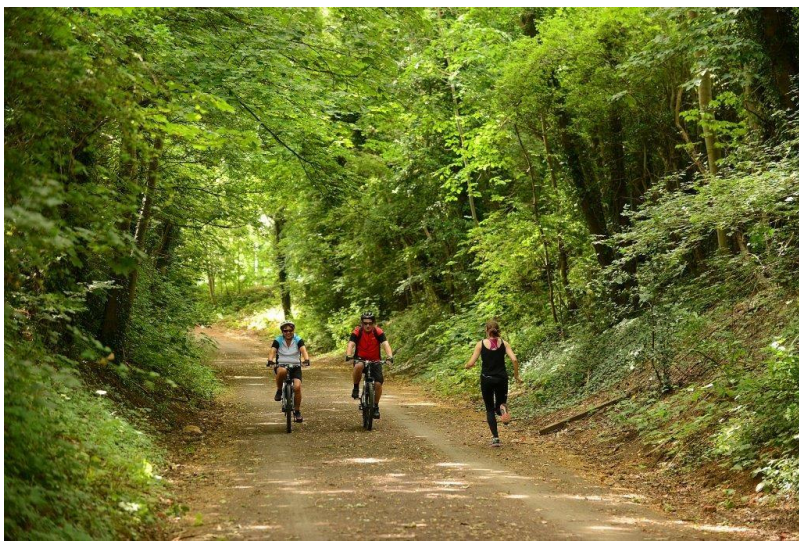
APPENDIX 10

Greater Norwich Infrastructure Plan 2018

Greater Norwich Growth Board

Greater Norwich Infrastructure Plan

June 2018



Jobs, homes, prosperity for local people



Contents

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Appendix 1 Infrastructure Framework This section lists all the currently planned strategic infrastructure projects.	24

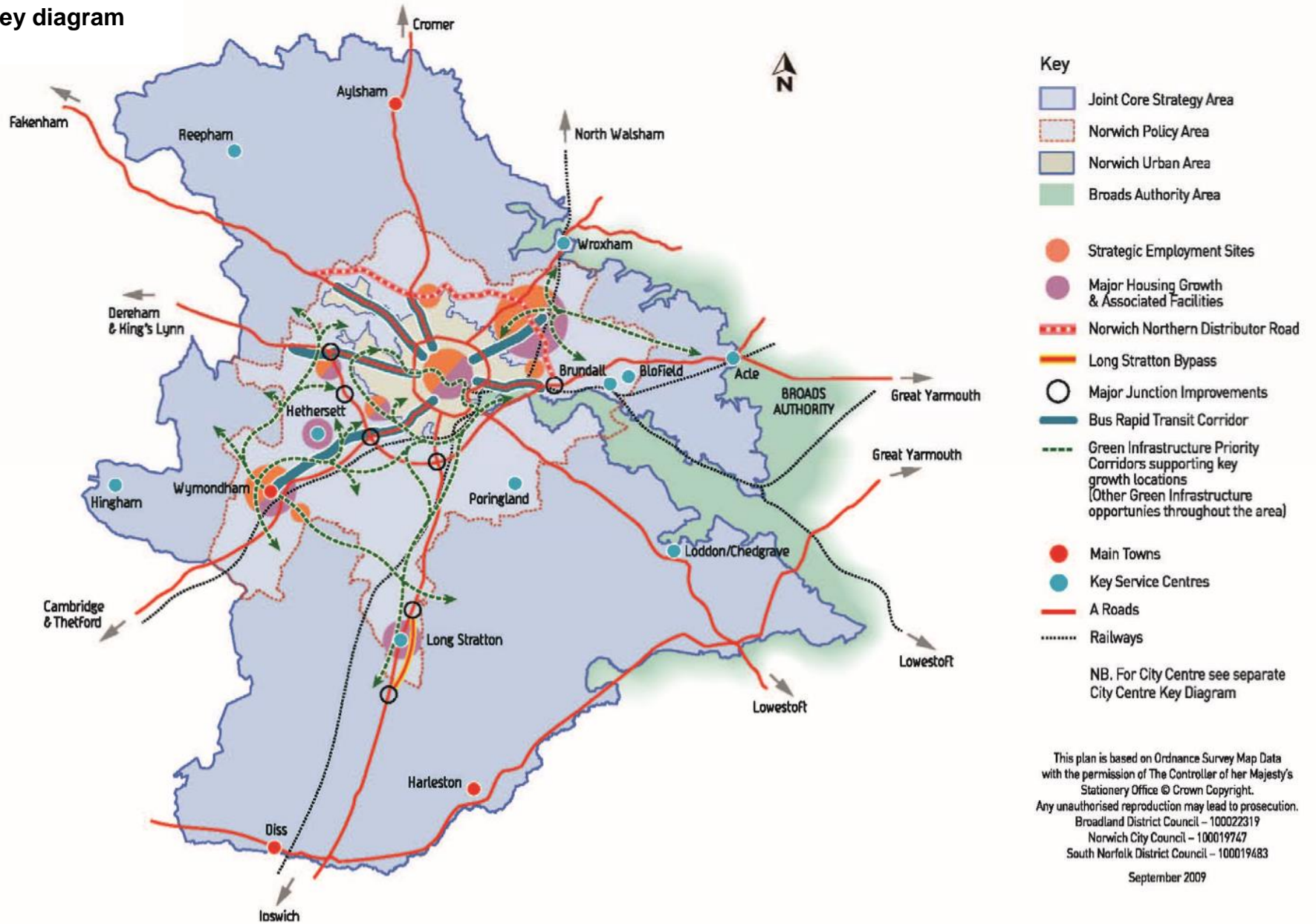
1. Introduction

- 1.1 The Greater Norwich area, covering the districts of Broadland, Norwich and South Norfolk, is a key engine of growth for the United Kingdom. The Joint Core Strategy for the area (JCS) aims to deliver 27,000 jobs and 37,000 homes between 2008 and 2026. Greater Norwich is one of the fastest growing areas in the country and has established itself as a leader in health and life sciences, digital creative and advanced manufacturing and engineering. The Greater Norwich City Deal, signed with government in December 2013, aims to bring an additional 13,000 jobs to the area, as well as 6,000 jobs in construction, and accelerate the delivery of 3,000 homes within the Growth Triangle. Through the City Deal the Greater Norwich Growth Board partners' ambition is to enable the existing world class knowledge to develop and grow into world class jobs and a thriving economy.
- 1.2 The Greater Norwich Local Plan (GNLP) is in an early stage of production. It will identify and provide for additional housing and jobs growth required to 2036. When it is adopted, which is scheduled for 2020, it will supersede the JCS and other local plan documents.
- 1.3 This document, the Greater Norwich Infrastructure Plan (GNIP), helps co-ordinate and manage the delivery of strategic infrastructure to support growth, a high quality of life and an enhanced natural environment¹. It informs prioritisation of investment and delivery. It is not an exhaustive list. It is a living document, updated annually to reflect the latest information.
- 1.4 The GNIP supports the delivery of the JCS, other Local Plan documents for the area, local economic strategies, the Greater Norwich City Deal, and the Strategic Economic Plan (produced by the New Anglia Local Economic Partnership). It draws on work to identify and secure the key infrastructure required to support growth as set out in the Joint Core Strategy Infrastructure Framework (included in JCS Appendix 7 and 7a). The updated Infrastructure Framework is included as Appendix 1.
- 1.5 While mainstream funding provides the primary support for new infrastructure, contributions from new development, such as Section 106 agreements and Community Infrastructure Levy are also important. Section 2 of this report provides an overview of funding and delivery mechanisms.
- 1.6 Section 3 outlines the range of infrastructure required to support growth including that delivered and funded by other means – e.g. Asset Management Plans, or infrastructure directly delivered or funded by development.
- 1.7 The GNIP concentrates on the key infrastructure requirements that support the major growth locations (see figure one – Joint Core Strategy Key Diagram) or the overall scale of growth. Individual developments tend to require smaller scale infrastructure that is not detailed here. Section 4 provides an overview of progress expected in the next few years on significant sites.

¹ The GNIP evolved from the previous Local Investment Plan and Programme to provide a more focused delivery plan.

- 1.8 Many elements of key infrastructure can be implemented incrementally to reflect emerging patterns of growth. This includes enhancements to public transport corridors to deliver the key components that contribute towards the delivery of a Bus Rapid Transit network, elements of the green infrastructure network and extensions to cycle routes.
- 1.9 The GNIP provides greater detail on the schemes for delivery in the shorter term. It does not seek to fundamentally review or re-prioritise agreed infrastructure, but is a means of refreshing and managing the strategic programme, keeping it up to date and fit for purpose.
- 1.10 However, as time moves on and projects evolve, some differences with previous work may be noted. This is because:
- Project titles can change to better reflect the details of the proposals.
 - A project can support more than one topic, for example a cycle route can be both green infrastructure and transport infrastructure.
 - The expected timing of infrastructure delivery can change, for example to reflect updated assumptions on the timing of the development it is intended to support, or because funding has become available.
 - Significant changes in timing can alter the nature of any solution and the capacity of existing infrastructure to support growth can have changed in the interim.

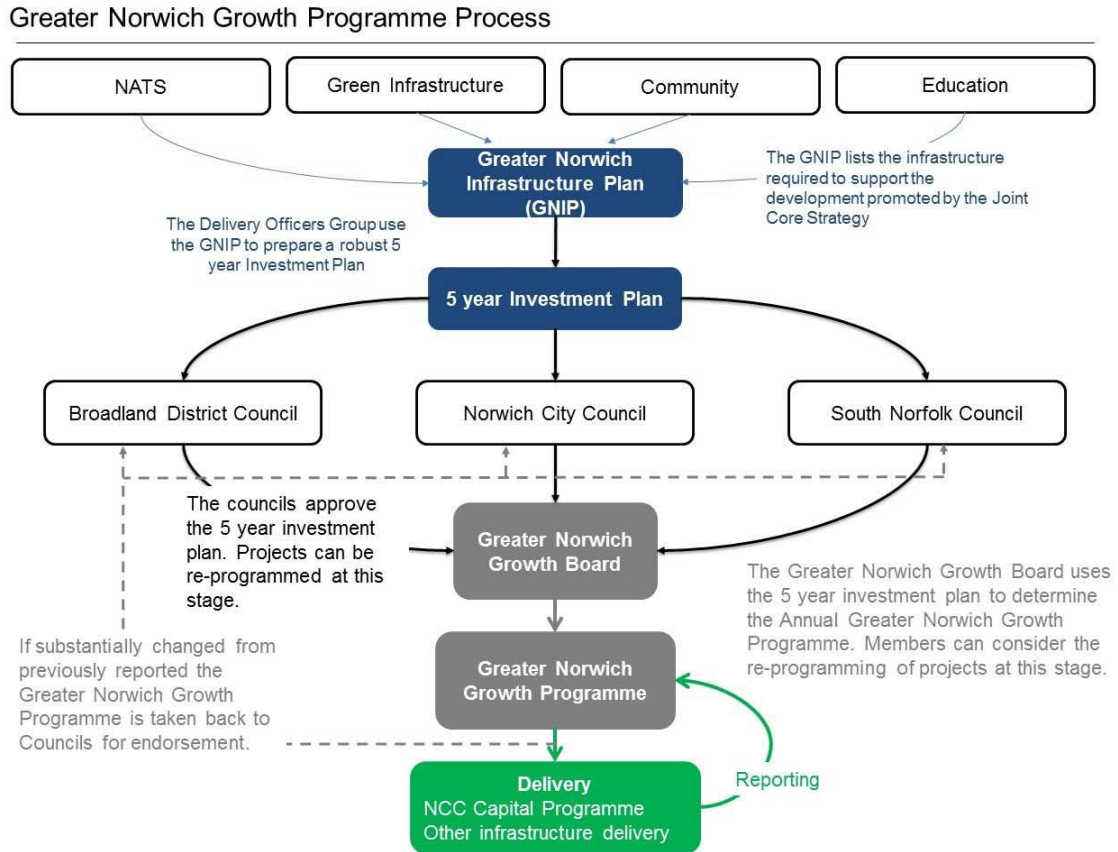
Figure 1: Key diagram



2. Funding sources and delivery planning

- 2.1 In December 2013, Broadland, Norwich City, Norfolk County, South Norfolk councils and the New Anglia LEP signed a City Deal with central government. A core theme supports infrastructure delivery to accelerate planned growth.
- 2.2 The City Deal identifies a £440m infrastructure investment programme developed from the JCS Infrastructure Framework. The councils, with the LEP, have put in place pooled funding and governance arrangements to manage timely delivery of the programme.
- 2.3 Estimates for the total forecast amount of CIL collected over the plan period have reduced over previous years, in part due to the increase in exemptions granted. The GNGB are considering undertaking a review of CIL which would in part consider forecasting. It must be noted that some estimates have been made for inflationary increases in CIL forecasts and infrastructure costs although this is not across the full spectrum of projects presented in the GNIP. The funding gap is likely to close as other funding streams are secured.
- 2.4 The GNIP provides the longer term context to inform short term investment plans and funding decisions. The councils manage the 5-year Infrastructure Investment Plan and Annual Growth Programme collectively, identifying projects for delivery and packages of funding. There is a collaborative approach to funding the programme through pooling of the Community Infrastructure Levy, Local Growth Fund, use of mainstream funding, identification of other funding such as pooled business rates or New Homes Bonus, and, where required and agreed, the use of borrowing. The Greater Norwich Growth Board manages the risks to delivery and provides a robust means of agreeing ongoing priorities.
- 2.5 The GNIP Infrastructure Framework looks over longer term and tends to identify the earliest date on which a piece of infrastructure can be delivered taking account of broad indications and reasonable assumptions of funding availability. The 5-year Infrastructure Investment Plan and Annual Growth Programme take a shorter term view and consequently prioritise schemes based only on known funding sources or those with a high degree of certainty.
- 2.6 Local communities will retain 15% of Community Infrastructure Levy contributions to deliver schemes within their area (25% where there is a Neighbourhood Plan in place).

Figure 2: Greater Norwich Growth Programme process



Progress on delivering key infrastructure

- 2.7 The Northern Distributor Road, officially named the ‘Broadland Northway’ is now open from the A1067 Fakenham Road to the A47 at Postwick.
- 2.8 A major improvement at Thickthorn junction to address existing and future congestion problems has been included in the Highways England A47 corridor improvement programme. The scheme is estimated to cost £25-50m with a construction period 2020-22.
- 2.9 Delivery of the Transport for Norwich (TfN) programme, formerly The Norwich Area Transportation Strategy Implementation Plan, is a New Anglia Strategic Economic Plan priority and remains a priority in the new Norfolk and Suffolk Economic Strategy. The New Anglia Growth Deal announced in July 2014, and the more recent (February 2015) Growth Deal 2 announcement, confirmed Local Growth Funding of £13m for scheme delivery from 2015- 2020. Final sign-off of the funding will be made by the New Anglia LEP Board. The Local Transport Body has been set up across Norfolk and Suffolk to provide advice to the LEP Board and manage central government funding devolved to the LEP for transport schemes.
- 2.10 The Norwich Area Transportation Strategy, which has now been rebranded the TfN strategy, is a New Anglia Strategic Economic Plan priority. £13m has been allocated by the LGF and £10.1M from the Department for Transport’s

City Cycle Ambition Grant (CCAG) fund to deliver transport infrastructure schemes within the TfN area for the period 2015-2020. In addition to this there are confirmed allocations of £1.4M CIL and £0.4M S106 to supplement the LGF and CCAG funding.

- 2.11 To date this funding has delivered public realm improvements with associated pedestrian and cycle benefits in the city centre at Westlegate, a much enhanced roundabout at Dereham Road / Guardian Road which improves journey times for all modes, significant parts of the Blue and Yellow pedalways and a public transport interchange at the UEA.
- 2.12 The implementation of a cycleway from Wymondham to Hethersett is currently under construction and work will shortly begin to implement a traffic management and public realm improvement scheme in Prince of Wales Road and Rose Lane which will provide quicker and more direct journeys whether on foot, by bike or in a bus or car. Also planned is a scheme to improve capacity for all vehicles at the A11 Newmarket Road / A140 Daniels Road roundabout on the outer ring road and a public transport interchange at Roundhouse Way.

3. Key Infrastructure

There are a range of topic based mechanisms for the delivery of infrastructure, including plans and strategies with their own objectives, priorities and implementation plans. The GNIP is guided by these topic plans and processes and also influences them to meet needs arising from emerging growth pressures. The GNIP's main focus is on green infrastructure, transport, schools and community facilities such as libraries, sports, recreation and Neighbourhood Plan priorities. This section of the report also includes other infrastructure which is required to support growth but is funded and delivered by other means and does not feature in the Infrastructure Framework. Work on utilities infrastructure and capacity constraints is ongoing.

Green Infrastructure

- 3.1 A Green Infrastructure Delivery Plan was produced in 2009 focusing on the two main geographical areas identified for significant development: South West and North East Norwich. It identifies a number of schemes or projects to contribute to the protection and enhancement of the strategic green infrastructure network and continues to inform delivery
- 3.2 However, the understanding of need and prioritisation is always under revision and as information becomes available, projects are refined and re-prioritised. The projects in the Greater Norwich Infrastructure Plan are based on the need to mitigate the potential impacts on Natura 2000 sites under the Habitat Regulations and an understanding of the timing of development served by the identified green infrastructure corridors.

Transport

- 3.3 Provision is guided by the Norwich Area Transportation Strategy (which is currently under review and is to be termed the Transport for Norwich strategy) and its implementation plan developed alongside the Joint Core Strategy. The proposals in the Implementation Plan (updated in 2013) include:
 - plans for improving transport and accessibility in the city centre
 - improving the cycling and walking network across Norwich
 - further improvements to rail and bus services building towards a Bus Rapid Transit system for the city
 - capacity improvements to the A47 Postwick interchange (Postwick Hub)
 - delivering the Northern Distributor Road (Broadland Northway)
 - taking additional steps to improve traffic flows in the area
- 3.4 A number of elements in the Implementation Plan are directly related to the delivery of growth, such as Bus Rapid Transit routes associated with major growth locations. Implementation is kept under review to reflect housing and employment delivery and the availability of further funding.
- 3.5 The transport strategy is currently being reviewed alongside a review of the Greater Norwich Local Plan.

Schools

- 3.6 The County Council is responsible for ensuring sufficient school places are provided and works with a variety of providers. Growth can often be accommodated through expansion of existing schools but new schools are also required to serve large scale growth. Funding comes from mainstream capital funding, S106 and CIL. The County Council develops a capital programme which is reflected in this GNIP.

Waste and recycling

- 3.7 Household waste is collected by Norfolk's local authorities but Norfolk County Council has responsibility to dispose of the waste which cannot be recycled and providing Household Waste Recycling Centres.
- 3.8 Norfolk County Council also has responsibility for planning to ensure that there is adequate capacity to deal with waste produced from commercial and industrial, construction and demolition, and hazardous waste.
- 3.9 There are currently seven Household Waste Recycling Centres in the area. A replacement site for Norwich's Mile Cross Recycling Centre is required from 2021. Additionally, housing growth in the area will place pressure on existing facilities, which may require a combination of new or improved facilities to meet future demand.

Police, Ambulance and Fire services

- 3.10 Development will be well designed, to include safe and accessible space where crime and fear of crime are minimised. Access to police services will require new local facilities in major growth locations. In this regard, Norfolk Constabulary has indicated the need for a new facility in the vicinity of Postwick junction.
- 3.11 Additional ambulance service capacity is expected to be met through a reorganisation of existing provision and the use of strategically located stand-points or facilities at hospitals, with limited impact on capital expenditure.
- 3.12 Fire appliances must be based at stations for most of the time. The existing fire stations across the area are well positioned in relation to the strategic growth locations and are expected to provide the necessary levels of service.

Health Care

- 3.13 Health care facilities and the infrastructure needed to promote healthy lifestyles are required. The precise scale and nature of the facilities required will be dependent on the evolving nature of healthcare provision and will be kept under review.
- 3.14 NHS England continue to engage with the GNGB partners about the need for health and social care facilities, including potential facilities at Old Catton/Sprowston and Rackheath, and the expansion of existing facilities elsewhere.

Community infrastructure

- 3.15 Parishes will receive 15% of the CIL to deliver community infrastructure projects that they deem necessary to support growth in their area. This rises to 25% where there is an adopted Neighbourhood Plan. Broadland District Council and South Norfolk Council continue to engage with parishes about the delivery of infrastructure, including how this relates to the development and implementation of Neighbourhood Plans. In the Norwich City Council area there are no parishes and the council will be consulting directly with communities.

Libraries

- 3.16 The County Council has a statutory responsibility to provide a comprehensive and efficient library service. New housing development may be served by a new library building or mobile services, improving or extending the current provision to provide extra capacity. Using Community Infrastructure Levy (CIL) funding the library service has used technology to extend the opening times of a number of sites to 69 hours per week covering 7 days. Of the 21 sites 8 are or will be open for longer as a direct result of CIL funding. Creating extra capacity for people to use public libraries.

Recreation

- 3.17 Recreational facilities are provided and maintained by a number of different organisations, both public and private. Additional recreational facilities required to serve growth will be provided on-site on larger new developments and through improvements to existing facilities. Evidence from a playing pitch and built sports facilities strategy led to the development of a prioritization process which is overseen by a sport and leisure implementation group, assisting sports facilities providers in accessing grant funding.

Housing

- 3.18 The Joint Core Strategy policy target for delivery of affordable housing is 33% of total housing delivery. Affordable housing will continue to be negotiated on a site by site basis alongside other direct development requirements. As strategic infrastructure is funded from pooled sources, negotiations on Affordable Housing provision do not directly impact on delivery of the Strategic Infrastructure programme.

Electricity

- 3.19 The partners continue to work with UK Power Networks and Local Energy East to explore mechanisms to ensure the cost of electricity infrastructure is shared proportionately between planned developments. No significant barriers to the delivery of required infrastructure have been identified, there are some localised areas with a current shortage of capacity for future growth, such as the Norwich Research Park (NRP) and parts of the Cambridge Norwich Tech Corridor which are being reviewed as part of the Greater Norwich Power infrastructure project.

Gas

- 3.20 Limited improvements to gas infrastructure are required across the area and do not provide a constraint.

Water

- 3.21 Long term water resources are under increasing pressure from a rapidly growing population, climate change and environmental needs. This requires a twin track approach of making the best use of available water through water efficiency measures before investing in new water supply capacity
- 3.22 Anglian Water’s “Water Resource Management Plan 2015” (WRMP) covers the period 2015 to 2040. Some £25.6m is being invested in the Norwich and the Broads water resource management zone during the period 2015-20 to deliver a relocation of the water extraction point on the River Wensum, improve water efficiency and enhance metering. Further investment is proposed post-2030 to resolve longer term issues. The plan also identifies additional options for maintaining the supply-demand balance should the future deficit significantly exceed current expectations.
- 3.23 A plan which will extend the timeframe to 2045 and replace the above is being developed. The “preferred option” in the [draft 2019 WRMP](#) for maintaining the supply-demand balance is to focus on demand management measures, with water transfers from the Norwich and the Broads zone to neighbouring areas.

Waste Recycling (waste water)

- 3.24 To keep pace with growth in the area, several water recycling centres (sewage treatment works) will require enhancement to ensure they continue to operate within environmental limits. The timing of these investments, including lead-in times, will be aligned to the phasing of development.
- 3.25 Anglian Water are preparing the first 25 year Water Recycling Long Term Plan to set out the strategy for meeting growth while protecting sites that rely on high water quality, including the Broads. The plan will provide an important evidence base for informing development proposals. The partners are working closely with Anglian Water to identify ensure infrastructure is provided in a timely manner to serve development.

Table 1: Sewerage investment required to support major growth

Broadland : North East Growth Triangle	A new strategic sewer to Whitlingham would use existing way leaves on the route of the existing sewer and can be upgraded in sections. Delivered by developers and Anglian Water through requisition order process.
Norwich : Three Score, Bowthorpe South Norfolk : North Hethersett; Costessey, Lodge; Farm, Easton	Yare Valley sewer upgrade
Long Stratton	Strategic sewer

Flooding

- 3.26 The great majority of development proposed in the JCS is located in areas with no fluvial/tidal flood risk. Any development proposed in areas of some flood risk (zone 2), will have to provide a flood risk assessment to show how flood risk can be mitigated. This will apply mainly to limited areas of the city centre. In Broadland and South Norfolk, the site allocations documents have actively avoided allocating any new sites with any Zone 2 or 3 flood risk.
- 3.27 Developers will work with the relevant public authorities to minimise flood risk through a combination of high quality urban design and green infrastructure, as well as use of Sustainable Drainage System.

Telecommunications

- 3.28 Digital connectivity, high speed and reliable broadband infrastructure is critical to economic development. It is also a key component in tackling deprivation and improving access to services amongst disadvantaged and isolated communities.
- 3.29 The “Better Broadband for Norfolk” rollout began in summer 2013 with contract one rollout completed at the end of 2015, at which point access to superfast broadband in Norfolk had doubled, reaching 84%. Contract two was signed in December 2014. This contract will complete at the end March 2020.
- 3.30 The independent Think Broadband website shows the following percentage of properties currently have access to Superfast broadband (24Mbps+):
<http://labs.thinkbroadband.com/local/index.php?area=E10000020>
- Broadland – 91%
 - Norwich – 99%
 - South Norfolk – 87%
- 3.31 By the completion of the Better Broadband for Norfolk rollout access is expected to increase to 97% in Broadland and 91% in South Norfolk.
- 3.32 The Government Better Broadband Subsidy scheme provides access to an alternative broadband solution such as wireless, 4G or satellite for any property with access to a download speed of less than 2Mbps where no upgrade is planned within the next 12 months
- 3.33 By the end of 2020, the Government is introducing a Broadband Universal Service Obligation which will allow residents to request a minimum download speed of 10Mbps.
- 3.34 The County Council considers broadband infrastructure a priority and as further funding becomes available coverage will increase towards an ultimate aim to achieve access for 100% of Norfolk properties.

Mobile voice and data coverage

- 3.35 The County Council is committed to working with mobile network operators to improve coverage.
- 3.36 A mobile voice and data coverage audit was commissioned in January 2018.
- 3.37 The headline results are that where coverage is available the quality of service is good, so there does not appear to be a need to invest in replacing existing equipment. However, there are significant gaps in coverage across all 4 providers such that one call in 5 placed will currently fail.
- 3.38 The County Council will work with the Mobile Network Operators to facilitate early access to council owned assets to help improve coverage as soon as possible.

4. Major Growth Locations

- 4.1 Infrastructure planning reflects the distribution of planned growth illustrated in figure one. Major growth locations which are under construction or likely to start on site in the near future are listed below.

North East Norwich

- 4.2 The North East sector includes the Old Catton, Sprowston, Rackheath Thorpe St Andrew Growth Triangle as well as a number of adjacent developments. It is the largest single growth location in Greater Norwich. Broadland District Council produced an Area Action Plan (AAP) to coordinate planning and delivery across the triangle. The AAP was adopted in July 2016.
- 4.3 The AAP planned for a further 11,600 additional new homes (on top of existing commitments in 2008 of approximately 1,400 homes), a 25 hectare expansion of Broadland Business Park, 25 hectares of new employment land at Rackheath. 30 hectares of new employment land is also planned north of Norwich airport. In addition, planning permissions have been granted for a 40 hectare Aeropark on the north side of the airport, and a 12,750m² office development on the old hospital site at Thorpe St Andrew.
- 4.4 Successful delivery of the Growth Triangle was dependent on the Postwick Hub and the Broadland Northway (previously known as the Northern Distributor Road). Postwick Hub is now complete and Broadland Northway is open to traffic.
- 4.5 Although the AAP was only recently adopted, significant progress has already been made in progressing sites and issuing planning permissions in the Growth Triangle:
- 5,800 dwellings have planning permission;
 - 1,200 further dwellings are subject to a Council resolution to grant planning permission.
 - planning applications have been lodged for a further 750 dwellings
- 4.6 While delivery will span a number of years, many of the identified sites are expected to be on site within the next 3 years. Emerging developments in the north east sector as a whole are summarised in table two:

Table 2: North East sector – significant sites for early delivery

Site/ Location	Development	Status	Expected start
Norwich International Airport	Aeropark 40ha aviation related business development	Permitted	
Land East of Buxton Road (Spixworth)	225 New Homes (minimum) Reserve Matters Application Submitted	Permitted	2018/19
Home Farm, Sprowston	164 Homes (73 built as of 1 April 2018)	Permitted	Commenced
Beeston Park (North of Sprowston and Old Catton)	3,520 dwellings, employment, shops, services, cafes, restaurants and pubs, a hotel, two primary schools, community space	Permitted	2018/19
White House Farm (Sprowston)	1233 dwellings dwellings (435 built as of 1 April 2018), a link road, a primary school, and a large woodland park	Permitted (pre-CIL)	Commenced
Land Adj. Salhouse Road (Rackheath)	79 dwellings and ancillary works	Permitted (pre-CIL)	Commenced
Brook & Laurel Farms including Broadland Business Park North (Thorpe St Andrew)	600 dwellings, 14.6ha of employment land and local centre plus a link road between Plumstead Rd and BBP.	Permitted (pre-CIL)	2019/20
Broadland Business Park South (Thorpe St Andrew)	Remainder of allocation (5 ha undeveloped)	Remainder of allocation	Commenced
Broadland Gate (Thorpe St Andrew)	c18ha of employment land associated with the Postwick Hub junction	Permitted Junction Complete	Commenced
Former northside hospital (Thorpe St Andrew)	12,750m ² office development	Permitted existing buildings demolished	

Site/Location	Development	Status	Expected start
Repton Avenue, Old Catton	Mixed Use Development of 340 Residential Dwellings with 5,640 sqm of Small Business Units (Outline)	Permitted - Self Build Units under construction	2018/19
Pinebanks – (Thorpe St Andrew)	231 dwellings	Permitted	2018/19
Griffin Lane - (Thorpe St Andrew)	71 dwellings & community building	Permitted	2018/19
Land South of Green Lane East, Rackheath	157 Dwellings together with Associated Access, Open Spaces & Infrastructure (outline)	Application Submitted	2018/19
Land South of Salhouse Road, Sprowston	Proposed development comprising a minimum of 803 dwellings with associated infrastructure; site for a new primary school; land for a Bus Rapid Transit (BRT) scheme; a section of orbital link road; retained areas of woodland and creation of open space (Outline)	Resolution to Grant Planning Permission	2018/19
Land South of Salhouse Road, Sprowston	Outline planning application for the erection of up to 380 dwellings with new vehicular, cycle and pedestrian access from Salhouse Road and new pedestrian and cycle access from Plumstead Road. The provision of open space, sustainable urban drainage systems; associated landscaping, infrastructure and earthworks	Resolution to Grant Planning Permission	2019/20
Land off Green Lane West, Rackheath	Residential Development of 50 units (Outline)	Resolution to grant Planning Permission	2019/20
Land North of Smee Lane, Great Plumstead	Development of up to 272 residential dwellings, 2ha site for Primary School, Public Open Space and associated infrastructure. Separate application submitted on allocation site for further 11 Self-Build Units.	Application Submitted	2020/21

4.7 The original delivery trajectory and infrastructure delivery profile was developed to support a strong start within the Triangle. This remains the case.

Norwich City

4.8 The city is unique as a growth location as the majority of the commitment of 8,600 dwellings will be delivered on many smaller sites within the existing urban area. Some of the more significant sites with early delivery are identified in table three below. The largest site, for 1000 dwellings at Bowthorpe, and developments at UEA are included under the South West Sector as they will share some of the same infrastructure.

Table 3: Norwich City - significant sites for early delivery

Site/ Location	Development	Status	Expected start
City Centre			
St Ann's Wharf, King Street	Mixed use of 437 dwellings plus retail & leisure	Permitted	Commenced
Mountergate West	Scope for mixed development of the site is being revisited. Likely to include residential plus employment.	Allocation	2020/21
Anglia Square	1250+ dwellings, hotel, retail and commercial, cinema, multi-storey car parks, place of worship and associated works to the highway and public realm	Submitted	2020/21
Muspole Street	57 dwellings previously permitted. Under new ownership	Pre – application advice given	2018/19
Barrack Street	Mixed use office (20,500sqm), shop units, hotel and 200 dwellings	Permitted	Part implemented
Edge of centre (Dereham Rd corridor)			
Goldsmith Street	105 dwellings in total, 12 of which are currently on hold	Permitted	93 dwellings due to be complete Oct 18
Edge of centre to south east sector			
Carrow Quay	250 dwellings	Permitted	Commenced
Lakenham Sports Club	75 dwellings	Permitted	Complete
North west sector (Fakenham Rd corridor)			
Havers Road	100 dwellings	Allocated	2018/19

4.9 These sites generally only require improvements to provide open space requirements and access but do pressure the city wide transportation networks and education provision. Education, transport and green infrastructure projects are required across the city to meet current development rates, although because of the area wide nature of many of these improvements development is not directly dependent on infrastructure delivery.

South West

Table 4: South West sector - significant sites for early delivery

Site/ Location	Development	Status	Expected start
Threescore-Bowthorpe	1000 dwellings, plus housing with care	Permitted (pre-CIL)	Care home completed 2016, phase 2 housing delivery now underway
Bartram Mowers, Bluebell Road	Accommodation for the elderly (blocks with 62 rooms and 60 dwellings)	Underway	Partially complete
Norwich Research Park EZ (Colney)	25 ha available for expansion, with outline permission. Centrum, Bob Champion and Leaf Systems Buildings completed. Quadram Institute Bioscience is due to open Summer 2018. Phase one infrastructure in Zone 4 is underway.	Permitted	Underway
Roundhouse Park (Cringleford)	Approx.60 dwellings remaining (total 999 dwellings). Site includes Cringleford Primary School, the Willow Centre and new commercial units.	Permitted (pre-CIL)	Underway
Newfound Farm (Cringleford)	Up to 650 dwellings (Barratts). Reserved matters application expected shortly.	Permitted	2018/19
Land north and south of A11 (Cringleford)	Up to 650 dwellings (outline permission). Variation of consent to split site into two parcels. £5.5m HIF bid to support upfront infrastructure on the site and support development by SME builders.	Permitted	2018/19
North village (Hethersett)	Approx. 1,065 dwellings remaining (total 1,196 dwellings) Includes new primary school site and space for local facilities.	Permitted (pre CIL)	Underway
Gt Melton Rd (Hethersett)	Approx. 20 dwellings remaining (total 151 dwellings)	Permitted (pre-CIL)	Underway
South Wymondham (inc. BOCM Paul & Sale Ground)	Approx. 1,200 dwellings remaining (total 1,308 dwellings). Includes provision of new primary school site.	Permitted (pre-CIL)	Underway

Site/ Location	Development	Status	Expected start
North-west Wymondham (Norwich Common, Carpenter's Barn, Spinks Lane, Wymondham RFC site)	Approx. 790 dwellings remaining. (total 1338 dwellings)	Permitted (some pre-CIL, some post-CIL)	Underway
Land adj Gonville Hall, Wymondham	Up to 320 dwellings granted outline planning permission on appeal in September 2016.	Permitted	2018/19
Browick Road, Interchange	Allocation of 15ha (net) of B1, B2, B8 employment land. Awaiting planning permission to be submitted.	Allocated	2018/19
Queens Hills (Costessey)	Approx. 120 dwellings remaining (total 1,881 dwellings) Site includes Queens Hills Primary School, West Costessey Hall community center and potential for local commercial facilities.	Permitted (pre-CIL)	Underway
West of Lodge Farm (Costessey)	Approx. 325 dwellings remaining (total 509).	Permitted (pre-CIL)	Underway
Longwater (Costessey)	6,660m ² major retail development for Next and recent application submitted on adjacent land for TK Maxx.	Completed	Completed in 2015/16 and open
Easton	893 dwellings granted outline planning permission in autumn 2016.	Permitted	2018/19
Hethel Technology Park	20ha of Greenfield land located next to Hethel Engineering Centre. The initial development will deliver circa 50,000m ² or workshop (80%) and office space (20%)	Market assessment and Masterplan in place	TBC

- 4.10 The South West includes four major growth locations in South Norfolk, Wymondham, Hethersett, Cringleford and Easton, plus Three Score (Bowthorpe) in Norwich. It also includes UEA (Norwich) and the strategic employment locations at Longwater, Hethel, Wymondham and Norwich Research Park.
- 4.11 Collectively the growth at Wymondham, Hethersett, Cringleford and the NRP is dependent on improvements at the A11/A47 Thickthorn junction and

public transport corridor enhancements. Major improvement at Thickthorn is included as a commitment in the Government's Road Investment Strategy Investment Plan with construction currently timetabled for a 2020 start and the improvements completed in 2022.

- 4.12 Similarly, growth at Easton and Costessey is served by investment in the A1074 Dereham Rd public transport route and improvements at Longwater junction. The A47 Easton junction will be affected by proposed dualling of the A47 between Easton and North Tuddenham which is also a commitment in the Road Investment Strategy Investment Plan.

Long Stratton

- 4.13 There is a long-standing need for a bypass to:
- significantly enhance the function of the A140 (recently identified as a potential element of the Government's Major Road Network);
 - improve quality of life for existing residents;
 - and facilitate further growth in the village.
- 4.14 The delivery of a bypass is a prerequisite for planned JCS growth. The Long Stratton Area Action Plan, which includes the bypass and 1,800 homes (alongside employment and other infrastructure) was adopted in May 2016; this requires the bypass to be delivered by the 250th new dwelling (unless viability information demonstrates that a higher threshold is necessary and that the highways impacts of a higher figure would not be unacceptable). Two planning applications to deliver the AAP levels of housing and employment were submitted in February 2018, one of which includes the bypass in detail. With one of the planning applications including detailed housing proposals, development is expected to start in 2019/20.

Elsewhere in the Norwich Policy Area

- 4.15 In addition to the major growth locations, the JCS seeks additional commitment for about 3800 homes on smaller sites in the Broadland and South Norfolk parts of the Norwich Policy Area. These sites are identified through sites allocations documents, and many of the sites have already secured planning permission. Recent permissions have also included speculative applications taking advantage of the lack of five year housing supply. Local infrastructure enhancements may be required for these sites and secured through Section 106 legal agreements. Cumulative impacts of small sites are hard to predict and it is likely that improvements will be driven by the pressure on services and facilities. These do not appear in the short term but will be kept under review. These kind of developments are detrimental to the effective planning and timely delivery of infrastructure across Greater Norwich, and can contribute to delays in the delivery of planned growth on more "challenging" (but allocated) sites which may require higher levels of infrastructure (and which may also have higher levels of development risk).

4.16 Some of the larger sites, or particular concentrations of smaller sites, may influence decisions on strategic infrastructure:

- Development at Blofield and Brundall will benefit from some of the strategic infrastructure serving the north east quadrant.
- Although of a smaller scale than in the north east and south west quadrants, significant concentrations of growth are planned in the north-west, on the Fakenham Road axis, and in the south east from the edges of the city centre out towards Poringland.

Table 5: other significant sites for early delivery:

Site/ Location	Development	Status	Expected start
Golf Course (Hellesdon)	Outline permission for up to 1,000 homes, including detailed proposals for the first phase of 110 dwellings, associated infrastructure including up to 2ha of land for a primary school site, 75sq m for D1 use (health facility) and up to 15.45ha for informal and formal open space plus off-site highway works	Permitted	2017/18
Hospital site	300 dwellings	Allocation	2018/19
Cator Lane / Hall Road	250 dwellings	Permitted	2018/19
Various Blofield / Brundall)	Over 500 dwellings	Permitted	Underway
Various Framingham Earl / Poringland	Approx. 840 dwellings remaining (total 994 dwellings)	Permitted	Underway
Long Stratton	1800 dwellings plus 9.5ha employment land and associated bypass	Allocated and application	2017/18
Various Long Stratton /	170 dwellings	Permitted (pre-CIL)	Underway
Long Stratton/Tharston	2.5 ha employment land at Tharston Industrial Estate	Emerging allocation	2016/17
Keswick	B1, B2, B8 – approx. 9 ha	Part allocated, with outline permission for larger site	2018/19

Outside the Norwich Policy Area

4.17 Outside the Norwich Policy Area the scale of planned growth is modest and in most instances is currently not identified to require anything other than development specific improvements likely to be secured through the planning process. Infrastructure requirements will be kept under review.

Transport

Ref	District	Project/Scheme Description	Status	Total Estimated Project Cost (£,000)	Total Estimated Scheme Cost (£,000)	Contributory funding (£,000)	SOURCE	Funding need (£,000)	Spend profile £'000s								
									2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
T1	Broadland	NDR					DfT, £40m CIL		46,220	5,670	1,700						
T3	South Norfolk	Long Stratton Bypass inc. Hempnall Crossroads and town centre improvements		30,000	30,000	15,000	Developer	15,000	1,000	7,250	15,500	6,250					
T4	South Norfolk	Thickthorn	Scheme development				HA Capital	0				x	x				
T4.2	South Norfolk	Thickthorn park and ride expansion	Land secured from S106. Discussions ongoing with Highways England regarding delivery options as part of wider Thickthorn junction works	tbc	tbc	tbc											
T5	South Norfolk	Longwater															
T5.1	South Norfolk	Longwater Scheme Development	Works underway. Tree clearance completed	2,000	2,000	2,000	LGF		500								
T5.2	Norwich South Norfolk	Green pedalway including Longwater pedestrian/cycle bridge	Feasibility completed on the Green pedalway as a whole. Schemes identified.		6,000			6,000		x	x	x					
T6	South Norfolk	Norwich Research Park expansion, B1108 and other transport improvements	NRP expansion permitted and under construction	13,000			Government grant, S106, NRP										
T7	Norwich	City Centre Measures															
T7.4	Norwich	Exchange Street closure	Feasibility needed for this to progress														
tbd	Norwich	Prince of Wales Road highway and sustainable transport improvements	Construction set to start late-2018 and complete 19/20	2,600			LGF / County Funds		211	1430	900						
tbd	Norwich	St George's Plain	Funds assumed to be supplied entirely by developer in association with St Georges Works	300		300	DEV	0			75	225					
tbd	Norwich	St Mary's Plain	If LEP funds diverted from Prince of Wales Road (tbc soon) then project can commence in 2017/18.	780		280	DEV/CIL	500		100	680						
tbd	Norwich	Tombland	Works on northern end of Tombland completed. Feasibility work underway for southern end.	1,750		0	CIL	1,750			1,000	1,000					
Also in G sheet	Norwich	East Norwich Gateway (formerly Whitlingham bridges and links)	Probable that Norwich City Council will promote using LIF funding. However this is dependent upon funding feasibility work	tbc			Developers, LIF, CIL		1,000	100	x	x	x				
	Norwich	Green pedalway city to Barnard Rd	Feasibility work on Green pedalway completed.				LGF / CIL			100	1,000	2,200					
T8	Broadland	Fakenham Road/Drayton High Road (including BRT and cycling)															
	Broadland Norwich	Fakenham Rd BRT Feasibility (Scheme Identification) - revenue	Feasibility needed		30	30		30									
T9	Norwich South Norfolk	Dereham Road Sustainable Transport Corridor (including BRT and cycling)															
T9.1	Norwich	Sweetbriar road/Guardian road/Dereham road- junction improvement	Scheme to be complete June 2018		1,545	1,600			x	x							
T10	Broadland Norwich	Yarmouth Road Sustainable Transport Corridor (including BRT and cycling)		10,000													
T10.1	Broadland Norwich	Yarmouth Rd Sustainable Transport Corridor Scheme Identification (BRT/Green Pedalway)			20	20	LGF		20								
T10.2	Broadland Norwich	Phase 1 Delivery			tbc	tbc											
T10.3	Broadland Norwich	Phase 2 Delivery			tbc	tbc											
T11	Broadland Norwich	Salhouse Rd Sustainable Transport Corridor (including BRT and cycling)															
	Broadland Norwich	Salhouse Rd Sustainable Transport Corridor Scheme Identification (BRT/Pink Pedalway)	See comment below		30	30	NCC Revenue										
	Broadland Norwich	Salhouse Rd Corridor Scheme delivery Phase 1	Works revised to concentrate on Plumstead Road roundabout to facilitate access to housing		400	400	LGF/CIL										
		St Clements Hill Toucan Crossing and associated works	Works completed March 2018														
		School Lane/ Chartwell Road/ Denton Road Toucan Crossing and associated works (Blue Pedalway)	Project abandoned following feasibility study		120	120	CIL										
		Repton Avenue Feasibility	Feasibility completed. Scheme deferred until later-2018		20	20	LGF										
T12	Broadland Norwich	A140 Sustainable Transport Corridor (including BRT and cycling)															
T12.1	Broadland Norwich	A140 Corridor scheme identification including analysis between City Centre and Harford (BRT/Yellow Pedalway)	Feasibility work underway looking at opportunities for bus priority and improved pedestrian and cycle facilities along the A140 between the Airport and City Centre. Works planned for 18/19		560	560	LTP/CIL		60	500							
	Norwich	Airport Industrial Estate		4,100				4,100		x	x						
T13 and T14	Norwich South Norfolk	A11/B1172 Sustainable Transport Corridor (including BRT and cycling)		6,560													
T13 and T14	Norwich South Norfolk	A11 sustainable transport corridor scheme identification (BRT/Pink Pedalway)			60	60	NCC Revenue										
T13.1	Norwich South Norfolk	Roundhouse Way Bus Interchange	Under development, land issues slowing progress		550	50	LGF/CIL			50	500						
T13.2	Norwich South Norfolk	Eaton interchange	Works in Eaton to be undertaken Summer 2018		600	600	LGF/CIL			600							
T14.1	Norwich South Norfolk	B1172 Bus/Cycle enhancements	See comment below relating to cycle link extension to Wymondham		250	250	LGF/CIL										
	Norwich South Norfolk	A11/ORR Daniels Road junction improvement and cycle lanes	Feasibility Work underway		1,650	1,650	LGF		50	750	850						
	Norwich South Norfolk	Cycle link extension to Wymondham	Construction underway. Will be delivered in 4 phases. All works to be complete late-2018. Works started 16/17		1,300	1,300	LGF		300	750							
	Norwich South Norfolk	Eaton Centre to Newmarket road south slip road cycle facilities	Works completed 2017		300	300	LGF										
	Norwich South Norfolk	A11 north slip road to Cringleford cycle track	Works completed 2018		50	50	LGF										
T15	Broadland	Growth Triangle Internal Link Road				14,350	Developer		2,350	4,850	-	-	-	-			
T15.1	Broadland	East West Link Road: BBP to Plumstead Rd	Delivered through development (BFLF)		6,000	6,000	S106/S278	-		3,000							
T15.2.1	Broadland	East West Link Road: Plumstead Road Junction and North Bound Spur	Scheme Development		400	400	LGF/CIL	-	x								
T15.2.2	Broadland	East West Link Road: Plumstead Rd to Salhouse Rd	Delivered through development (Land South of Salhouse Rd)		TBC		TBC	TBC		x	x						
T15.3	Broadland	East West Link Road: Salhouse Rd to Wroxham Rd	Delivered through development (WHF)		3,250	3,250	S106/S278	-	x								
T15.4	Broadland	East West Link Road: Wroxham Road to B1150	Delivered through development (NS&OC)		TBC		S106/S278	TBC				x	x				
T15.5	Broadland	East West Link Road: North Walsham Road to Buxton Road	Delivered through development (NS&OC). LIF bid agreed in principle		3,700	3,700	LIF - developer	3,700		1,850	1,850						
T15.6	Broadland	East West Link Road: Buxton Road to St Faiths Road	Delivered through development (NS&OC)		TBC		S106/S278	TBC		x							
T15.7	Broadland	East West Link Road: St Faith's Road to Airport Industrial Estate	Brief Agreed. Feasibility Underway		TBC	1,000	S106/S278/CIL	TBC		500	500						

Ref	District	Project/Scheme Description	Status	Total Estimated Project Cost (£,000)	Total Estimated Scheme Cost	Contributory funding (£,000)	SOURCE	Funding need	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
T15.8	Broadland	Cycle Links Plumstead Road to Green Lane Crossing	Delivered through development (Land South of Salhouse Rd)		TBC		S106/S278	TBC		x							
T15.9	Broadland	Cycle Links Plumstead Road to Salhouse Road	Delivered through development (Land South of Salhouse Rd)		TBC		S106/S278	TBC		x	x						
T15.10	Broadland	Cycle Links NS&OC Wroxham Road junction to WHF Road Link Junction	Requires Project Brief / Feasibility		TBC		CIL /Other	TBC						x			

Green Infrastructure

Ref	District	Project/Scheme Description	GI Priority Area	Status	Total Estimated Scheme Cost	Contributory funding (£,000)	SOURCE	Funding need (£,000)	Spend profile £'000							
									2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Projects promoted in the Draft 5 year Investment Plan for Delivery in 2017/18																
	South Norfolk	Improved Connectivity - Costessey Circular Walks	Marriott's Way		6	HLF bid for £3k successful - CIL funding need reduced to £3k	CIL / other	3	6							
	Broadland	Thorpe Ridge - Protection and enhancement of woodlands and provision of public access; Feasibility Study	Thorpe Ridge to The Broads via North Burlingham	Brief written for feasibility			Promoter	0	5							
	South Norfolk	Cringleford N & N Strategic Connections	Norwich Fringe South	Ready to commence delivery	68	£9,750 S106 available	CIL / S106	58	10	58						
	Norwich	Riverside walk accessibility improvements	Norwich - Wensum Parkway	Emerging from Wensum Strategy work	200		CIL	200	20	180						
GI P5.7	South Norfolk	Wymondham -Protection and enhancement of the Lizard and Silfield Nature Reserve	Wymondham GI	Requires Project Brief / Feasibility	40		CIL	40	40							
	Broadland	Thorpe Marriott to Costessey	Marriott's Way	Ready to commence Delivery	100		CIL / other	100	100							
GI P7.1.6	Norwich	Sloughbottom Park – Andersons Meadow section improvements (path widening, tree works, drainage works and landscaping)	Marriott's Way	Ready to commence Delivery	250		CIL /other	250	150	100						
GI P9.4.14	Broadland	Strumpshaw Pit Circular Walk	East Broadland GI	Project Development	60	approx. £25k S106 from Strumpshaw development	CIL/S106	35		35						
GI P7.1.4	Norwich	Barn Road Gateway	Marriott's Way	Ready to commence Delivery preferable in 18/19 to allow related HLF works in 17/18	40		CIL / other	40		40						
GI P1.3.1	Broadland	Broadland Way - Green Lane North to Plumstead Road	Norwich to The Broads (Mousehold Heath through the NEG T to the Broads)	Phase 2 of Broadland Way	150		CIL	150		150						
	Norwich	Riverside walk: Fye Bridge to Whitefriars	Norwich - Wensum Parkway	Emerging from Wensum Strategy work			CIL			160						
Projects coming forward for Delivery in future years																
	Norwich	Mile Cross Cycle and Pedestrian Links		Moved from Transport Tab	100		CIL neighbourhood	75	25		75					
GI N.1.2	Norwich	Riverside Walk Missing Link Duke St to St George's St	Norwich - Wensum Parkway	Feasibility	300		CIL / Other	300			300					
GI NFS 1.6.1	Norwich South Norfolk	East Norwich Gateway (previously Norwich Crossing & Bridges – Whitlingham (Phase 1 & 2))	Norwich Fringe South	Feasibility and Design work required 17/18 and 18/19	1,000		CIL/Developer	1,000			x	x	x			
GI NFS 1.7	Norwich	UEA to Eaton Boardwalk extension	Norwich Fringe South	Requires Project Brief / Feasibility.	100		potentially developer funded/CI	100		100						
GI NFS.1.3	South Norfolk	Yare Valley: Lodge Farm to Bawburgh Lakes connection	Norwich Fringe South	Requires feasibility and scheme development	210	£24,750 S106 from Lodge Farm	S106/CIL	185		210						
GI NFS.2	Norwich	Yare and Wensum Valleys Link (Norwich, Broadland and SNDC)	Norwich Fringe South	Needs scheme development	229	S106 - Query against Bunkers Hill project	CIL, S106 Bunkers Hill £59k	170		59	75	95				
GI NFS.4.17	Norwich	Chapel Break allotments	Norwich Fringe South	Bowthorpe Open Space investment plan - Design required	121	PREVIOUSLY listed as City Council Capital Programme	Nbhd CIL	0		0						
	Norwich	20 Acre Wood	Norwich Fringe South	Project Delivery	90	£10,000 Nbhd CIL	Nbhd CIL	80		90						
GI P1.1.2	Broadland	Enhancement of Newman Woods	Norwich to The Broads (Mousehold Heath through the NEG T to the Broads)	Part-delivered. Further elements being worked up	tbc		£50k Rackheath POD funding (£26,125 remaining)				x					
GI P4.2	South Norfolk	Long Stratton Green Infrastructure Project Plan	Tas Valley	Project Delivery	10	£10,000 S106 from Tharston	S106	0		x						
GI P5.6	South Norfolk	Wymondham - Tuttle Lane enhancements Phase 1	South West	Feasibility and initial project establishment costs	30		CIL	30				10	10	10		
GI P8.1	Broadland	North West Norwich Forest Connections including Drayton and Thorpe Marriott	North West Forest and Heath	Feasibility Study			CIL/other									
GI P8.1.1	Broadland	Hellesdon to Drayton Greenway	North-west Forest & Heaths and Marriotts Way & the Wensum	Phase 1 Feasibility & Design Phase2 Delivery	105	S106 ?	Cil / S106	105	0	35	35	35				
GI P8.1.2	Broadland	Drayton to Horsford Greenway	North-west Forest & Heaths and Marriotts Way & the Wensum	Phase 1 Feasibility & Design Phase2 Delivery	105	S106 ?	CIL/S106	105	0	35	35	35				
GI P8.1.3	Broadland	Thorpe Marriott Greenway	North-west Forest & Heaths and Marriotts Way & the Wensum	Phase 1 Feasibility & Design Phase2 Delivery	105	S106 ?	CIL/S106	105	0	35	35	35				
GI P9.1	Broadland	Improvement to walking in the NE; in relation to NDR	GNGB Primary Linkage corridor: EastBroadland GI	Requires project brief / feasibility			CIL				x	x				
GI P9.2.2	Broadland	Brundall to NEG T Connection	GNGB Primary Linkage corridor: EastBroadland GI	Feasibility	5		Promoter				5					
GI P9.3	Broadland	Bure Valley Blue Way	GNGB Primary Linkage corridor: EastBroadland GI	Requires project brief / feasibility			CIL					x				
GI P9.4.1	Broadland	Acle Lands Trust Woodlands Access and Connectivity Project	East Broadland GI	Project Development	180		CIL	180			180					
GI P 9.4.2	Broadland	Burlingham Trails Cycling and Walking Routes	East Broadland GI	Project Development	180		CIL	180			100	80				
GI P 9.4.3	Broadland	Burlingham Trails Attractions and Facilities Project	East Broadland GI	Project Development	240		CIL	240				80	80	80		
GI P 9.4.4	Broadland	Long Distance Cycle Loop	East Broadland GI	Project Development	75		CIL	75			75					
GI P 9.4.5	Broadland	A47 Safe Foot and Cycle Crossing	East Broadland GI	Project Development	725,000 – 1,265,000		CIL	725,000 – 1,265,000			725,000 – 1,265,000	4 years	4 years	4 years		
GI P 9.4.6	Broadland	Local walking circulars with links to pubs, restaurants and cafes	East Broadland GI	Project Development	35		CIL	35				35				
GI P 9.4.7	Broadland	Link from Blofield to Blofield Heath	East Broadland GI	Project Development	125		CIL	125				125				
GI P9.4.8	Broadland	Cremer's Meadow, Brundall	East Broadland GI	Project Development	25		CIL / NBhd	25		25						
GI P 9.4.9	Broadland	Witton Run	East Broadland GI	Phase 1 Feasibility & Design Phase2 Delivery	170	S106?	CIL	170	x		170	x	x	x		

Ref	District	Project/Scheme Description	GI Priority Area	Status	Total Estimated Scheme Cost	Contributory funding (£,000)	SOURCE	Funding need (£,000)	Spend profile £'000								
									2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
GI P9.4.10	Broadland	Great Plumstead Open Space / Community Orchard	East Broadland GI	Project Development	25	0	CIL	25			25						
GI P9.4.11	Broadland	South Walsham GI Project	East Broadland GI	Project Development	150		CIL	150			150						
GI P9.4.12	Broadland	West Brundall GI Project	East Broadland GI	Project Development	425		CIL	425			75	350					
GI P9.4.13	Broadland	South East Lingwood GI Connectivity	East Broadland GI	Project Development	25		CIL	25			25						
GI S.1	Broadland	Brundall to Acle Green Network	GNGB Secondary Corridors	Requires project brief / feasibility			CIL					X					
GI S.2	Broadland	Lenwade to Hevingham Secondary Corridor	GNGB Secondary Corridors	Requires project brief / feasibility			CIL					X					
GI S.3	Broadland	Haveringland to Cawston Secondary Corridor	GNGB Secondary Corridors	Requires project brief / feasibility			CIL					X					
GI S.4	Broadland	Broadland East to West Secondary Corridor Via Marsham	GNGB Secondary Corridors	Requires project brief / feasibility			CIL					X					
GI S.5	Broadland	Buxton Heath to Aylsham Secondary Corridor	GNGB Secondary Corridors	Requires project brief / feasibility			CIL					X					
GI S.6	Broadland	Hevingham to Thorpe Marriott Secondary Corridor	GNGB Secondary Corridors	Requires project brief / feasibility			CIL					X					
GI S.7	Broadland	Catton Park to Spixworth Secondary Corridor	GNGB Secondary Corridors	Requires project brief / feasibility			CIL					X					
GI S.8	Broadland	Beeston Park to Spixworth Secondary Corridor	GNGB Secondary Corridors	Requires project brief / feasibility			CIL					X					
GI S.9	Broadland	Thorpe Woodlands to Broadwalk Plantation Secondary Corridor	GNGB Secondary Corridors	Requires project brief / feasibility			CIL					X					
GI S.10	Broadland	Thorpe Woodlands to Dobbs Beck (Via Harrisons Plantation) Secondary Corridor	GNGB Secondary Corridors	Requires project brief / feasibility			CIL					X					
GI S.11	Broadland	Thorpe Woodlands to Dobbs Beck (via Rackheath Park) Secondary Corridor	GNGB Secondary Corridors	Requires project brief / feasibility			CIL					X					
GI S.12	Broadland	Thorpe Woodlands to Witton Run Secondary Corridor	GNGB Secondary Corridors	Requires project brief / feasibility			CIL					X					
GI S.13	Broadland	Thorpe Woodlands to Smee Lane Secondary Corridor	GNGB Secondary Corridors	Requires project brief / feasibility			CIL					X					
	Broadland	South Walsham Fen Access	East Broadland GI		35		CIL	35			35						
	South Norfolk	Boudicca Way: Access for all	GNGB Secondary Corridors	Project Development			CIL			x							
	South Norfolk	Boudicca Way cycle route	GNGB Secondary Corridors	Preliminary design work	23	includes 15% management cost	CIL	23			20	3					
	South Norfolk	Boudicca Way links to development	GNGB Secondary Corridors	Preliminary design work	17	includes 15% management cost	CIL	17			15	2					
	Area-wide	MW: Biodiversity Management with Community Engagement	Marriott's Way and the Wensum	Ready to commence delivery	160	£4k secured from Norwich Fringe Project, £15k HLF confirmed, £30k sought from Nfk Biodiversity Partnership	CIL / Other	101		45	28	29	29	29			
	Norwich	MW: Inner Ring Road crossing	Marriott's Way and the Wensum		250		CIL / other	250		40	210						
	Broadland South Norfolk	MW: Signage to Link Marriott's Way to the Adjacent Communities	Marriott's Way and the Wensum		20	HLF bid for £10k	CIL / other	10		20							
	Norwich	MW: Hellesdon Station Area	Marriott's Way and the Wensum		210		CIL / other	210			105	105					
	Broadland	MW: Aylsham Gateway	Marriott's Way and the Wensum		30		CIL / other	30			30						
	Broadland	MW: Surfacing Works (Tesco's)	Marriott's Way and the Wensum		85	Tesco Bags of Help scheme being explored	CIL / other	85k estimate		85							
	South Norfolk	MW: Trim Track - Costessey	Marriott's Way and the Wensum		10		CIL	10				10					
	Broadland South Norfolk	MW: Crossing Points Improvement Project	Marriott's Way and the Wensum		89	HLF bid for £10k	CIL / other	79		89							
	Broadland	MW: Reepham surfacing and biodiversity	Marriott's Way and the Wensum		100		CIL / other	100				100					
	Broadland	MW: Crossing over Taverham Road in Drayton	Marriott's Way and the Wensum		100		CIL / other	100				100					
	Broadland Norwich	MW: Walking and Cycling Link to the Red Pedalways Route from the Proposed Royal Norwich Golf Club Development – Feasibility Plan	Marriott's Way and the Wensum	Feasibility - £20k			CIL / other						x	x			
	Norwich	Bishops Bridge to Whitefriars	Norwich - Wensum Parkway	Emerging from Wensum Strategy work	50		CIL / Other	50				50					
	Norwich	Carrow Bridge to Ber Street Woodland (Previously Boom Towers)	Norwich - Wensum Parkway	Emerging from Wensum Strategy work	750	HLF to be explored	CIL / HLF	750				375	375				
	Norwich	Marriott's Way & Wensum Riverside Walk Accessible Circular Walk 1; Train Wood	Marriott's Way and the Wensum		57		CIL	57				57					
	Norwich	Marriott's Way & Wensum Riverside Walk Accessible Circular Walk 2; Wensum Local Nature Reserves	Marriott's Way and the Wensum		60		CIL	60					60				
	Norwich	Riverside Walk missing link Sweetbriar Road	Norwich - Wensum Parkway	feasibility required	tbc		CIL/other	x				x					
	Norwich	Riverside Walk Improvements: Mile Cross Road to Dolphin Bridge	Norwich - Wensum Parkway	feasibility required	tbc		CIL/other	x				x					
	Norwich	Riverside Walk Improvements: Wensum Park Access Improvements	Norwich - Wensum Parkway	feasibility required	tbc		CIL/other	x				x					
	Norwich	Riverside Walk Improvements: Hellesdon Road to Marriott's Way	Norwich - Wensum Parkway	feasibility required	tbc		CIL/other	x				x					
	Norwich	Riverside Walk Improvements: environmental improvements south of Swanton Road	Norwich - Wensum Parkway	feasibility required	tbc		CIL/other	x				x					
	Norwich	Riverside Walk Improvements: Mile Cross Road to Dragon Crossing	Norwich - Wensum Parkway	feasibility required	tbc		CIL/other	x				x					
	Norwich	Riverside Walk Improvements: Dolphin Dyke and Boot Binders Road	Norwich - Wensum Parkway	feasibility required	tbc		CIL/other	x				x					
	Norwich	Earlham Millennium Green Improvement Project: Phase 3	Norwich Fringe South		25		Nbhd CIL	25		25							
	South Norfolk	Kett's Country Trail	South West	Project Development	97	includes 15% management cost	CIL	97			85	12					
	Norwich	Kett's Heights	Thorpe Ridge - Norwich link	10k Neighbourhood CIL in 16/17	150		Nbhd CIL, £90K HLF funding	50		50							
	South Norfolk	Wherryman's Way : Chedgrave Disabled Access Path	Yare Valley (Norwich to Yarmouth)	Project Delivery	75		CIL	75		75							
	South Norfolk	Wherryman's Way: Strategic Link at Reedham	Yare Valley (Norwich to Yarmouth)	Project Delivery	35		CIL	35		35							
	South Norfolk	Wherryman's Way : Yare Valley Cycle Route	Yare Valley (Norwich to Yarmouth)	Project Delivery	23	includes 15% management cost	CIL	23		20	3						

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									2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	
Projects expected to be delivered by development																		
GI P1.7	Broadland	North Sprowston and Old Catton GI Linkages - Focus on Church Lane	Norwich to The Broads (Mousehold Heath through the NEG T to the Broads)	Requires Project Brief			Dev (Beyond Green)					x						
GI P2.1.2	Broadland Norwich	Tree planting & management of existing street, garden, boundary and woodland trees for ecological connectivity	Thorpe Ridge to The Broads via North Burlingham	Feasibility required			Delivered by development	0	x	x	x	x	x					
GI P1.1.3	Broadland	North-South GI Connectivity NE Rackheath	Norwich to The Broads (Mousehold Heath through the NEG T to the Broads)	Requires Feasibility			S106	0			x	x	x					
GI NFS.4.12	Norwich	Threescore Development: Bowthorpe Historic Parkland	Norwich Fringe South	Bowthorpe Open Space investment plan - Design required	94		S106	0										
GI NFS.4.13	Norwich	Threescore Development: The Runnel	Norwich Fringe South	Bowthorpe Open Space investment plan - Design required	269		S106	0										
GI NFS.4.14	Norwich	Threescore Development: Bowthorpe Southern Park	Norwich Fringe South	Bowthorpe Open Space investment plan - Design required	81		S106	0										
GI NFS.4.20	Norwich	Bowthorpe and Earham marshes paths	Norwich Fringe South	Bowthorpe Open Space investment plan - Design required	67		S106	0			0							
GI NFS.4.21	Norwich	Yare Valley path northern extension	Norwich Fringe South	Bowthorpe Open Space investment plan - Design required	91		S106	0			0							
GI NFS.5	South Norfolk	Queens Hill Country Park	Norwich Fringe South	Permitted - SNC taking on management imminently. Feasibility project to connect to Marriotts Way			S106	0										
GI NFS.5.1	South Norfolk	Marriott's Way to Queens Hill Cycle connection	Norwich Fringe South		120	Queens Hill Travel Plan S106	S106	0			0							
GI NFS.7.1 (NP 2.1)	South Norfolk	Cringleford Landscape Protection Zone (ENV1 of Neighbourhood Plan)	Norwich Fringe South	Delivered by Development			S106	0										
GI NFS.7.2 (NP 2.1)	South Norfolk	Cringleford Gateway Tree Belt (ENV2 of Neighbourhood Plan)	Norwich Fringe South	Delivered by Development			S106	0										
GI NFS.7.3 (NP 2.1.4 and GI NFS 3.1)	South Norfolk	Cringleford Walking and Cycling (SCC3 of Neighbourhood Plan)	Norwich Fringe South	Delivered by Development (linked with NFS 3.1)			S106	0										
GI F.	South Norfolk	Footpath/cycleway Hethersett Lane to A47	Norwich Fringe South	Project Development	50	£1.3m S106 from NNUH	S106	0			50							
GI P1.2	Broadland	North Rackheath Park – Broads Buffer Zone	Norwich to The Broads (Mousehold Heath through the NEG T to the Broads)	delivered by development			S106	0										
GI P1.3.2	Broadland	Three Rivers Way; Connection to Broadland Way/Norwich Cycle Network	Norwich to The Broads (Mousehold Heath through the NEG T to the Broads)	Three Rivers Way funded. Funding required for connection to Broadland Way/Norwich Cycle Network			CIL	0										
GI P1.4	Broadland	Sprowston Manor Golf Course - Retention and protection of bat roosts	Norwich to The Broads (Mousehold Heath through the NEG T to the Broads)	Mainly protection; Requires Project Brief			DEV	0		0								
GI P1.7	Broadland	North Sprowston and Old Catton GI Linkages - Focus on Church Lane	Norwich to The Broads (Mousehold Heath through the NEG T to the Broads)	Requires Project Brief			Dev (Beeston Park)	0	0	0		0	0	0	0	0	0	0
GI P1.9 (BDC ref GI S 10.1)	Broadland	Enhancements habitat connectivity Racecourse Plantation to Harrison Plantation	Norwich to The Broads (Mousehold Heath through the NEG T to the Broads)	Requires Project Brief / Feasibility			S106	0	0	0	0	0						
GI P1.10 (BDC ref GI S 11.1)	Broadland	Parkland NE of Thorpe End	Norwich to The Broads (Mousehold Heath through the NEG T to the Broads)	Requires Project Brief / Feasibility			S106	0	0	0	0	0						
GI P2.1.1	Broadland	Management of Weston Wood (Ancient Woodland). Pinebanks/Griffin Lane GI and Woodland Management Plans.	Thorpe Ridge to The Broads via North Burlingham	Ancient Woodland Management Plan to be produced and implemented on Pinebanks site secured through the grant of planning permission.			S106	0	0									
GI P2.2	Broadland	Thorpe Woodlands - protection of wildlife interest & Connectivity (E Norwich Community Woodlands)	Thorpe Ridge to The Broads via North Burlingham	Through LP policy				0										
GI P9.2.3 (BDC ref GI S 12.3)	Broadland	Landscaping of Green Lane East and Brook Farm Road Links	GNGB Primary Linkage corridor: EastBroadland GI	To be delivered by development			Dev	0	0									
GI P9.2.4 (BDC ref GI S 12.4)	Broadland	Landscaping of Middle Road, Gt & Lt Plumstead	GNGB Primary Linkage corridor: EastBroadland GI	Delivered by development (NDR / Brook & Laurel Farm)			Dev	0	0									
GI P9.2.5 (BDC ref GI S 13.1)	Broadland	Enhanced landscaping alongside Green Lane and Smee Lane	GNGB Primary Linkage corridor: EastBroadland GI	Delivered by development (NDR / Brook & Laurel Farm / AAP Allocation GT11)			Dev	0										
GI P9.2.6 (BDC ref GI S 12.1)	Broadland	Informal Open Space south west of Thorpe End	GNGB Primary Linkage corridor: EastBroadland GI	Delivered by development (NDR / Brook & Laurel Farm)				0										
GI P9.2.7 (BDC Ref GI S13.2)	Broadland	North-South GI Connectivity Gt & Little Plumstead/Postwick: Thorpe Woodlands to Smee Lane	GNGB Primary Linkage corridor: EastBroadland GI	Delivered by development (NDR / Brook & Laurel Farm / AAP Allocation GT11)				0										
GI NDR 1 (BDC Ref GI S.7.2, and T1)	Broadland	NDR Mitigation (Culvert north of Redhall Farm)	NDR MITIGATION	Delivered by NDR				0	0									

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									2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
GI NDR 2 (BDC Ref GI S.9.1 and T1)	Broadland	NDR Mitigation (Bat gantry and Culvert north of Garden Plantation)	NDR MITIGATION	Delivered by NDR				0	0								
GI NDR 3 (BDC Ref GI S.11.2 and T1)	Broadland	NDR Mitigation (Culvert and new tree belt north of Sprowston Wood)	NDR MITIGATION	Delivered by NDR				0	0								
GI NDR 4 (BDC Ref GI S.12.5 and T1)	Broadland	NDR Mitigation (Bat Gantry, Culvert and Brown Bridge NDR Middle Road Crossing)	NDR MITIGATION	Delivered by NDR				0	0								
GI NDR 5 (BDC Ref GI S.13.3 and T1)	Broadland	NDR Mitigation (Bat Gantry and Culvert at Smea Lane)	NDR MITIGATION	Delivered by NDR				0	0								
NOTE		OTHER NDR MITIGATION TO FOLLOW (LIST NEEDS TO BE COMPILED)	NDR MITIGATION					0	0								
GI P5.4	South Norfolk	Wymondham GI Evidence and Project Plan	South West	Delivered by Development		£1400 S106 Right Up Lane, £50 per dwelling S Wymondham	S106	0	0								
GI NFN.2	Broadland	Orbital Cycle Route - NEGT to Norwich Airport	Norwich Fringe North	Delivered by Development			S106/S278/CIL	0									
GI NFN.5	Broadland	Delivery of Open Space inc. Play Space and Sports Pitches - North East Norwich	Norwich Fringe North	Delivered by Development			S106	0									
GI NFN.5.1 BDC ref GI.S.8.1	Broadland	Delivery of Sport Pitches, Children's Play and Informal Open Space at White House Farm	Norwich Fringe North	Delivered by Development			S106	0									
GI NFN.5.2	Broadland	Delivery of Sport Pitches, Children's Play and Informal Open Space at Beeston Park	Norwich Fringe North	Delivered by Development			Dev	0									
GI NFN.5.3	Broadland	Delivery of Sport Pitches, Children's Play and Informal Open Space at Brook Farm	Norwich Fringe North	Delivered by Development				0									
GI NFN 5.4	Broadland	Delivery of Sport Pitches, Children's Play and Informal Open Space at Land East of Buxton Road	Norwich Fringe North	delivered by development			S106	0									
GI NFN.5.5	Broadland	Delivery of Sport Pitches, Children's Play and Informal Open Space at Pinebanks and Griffin Lane	Norwich Fringe North	delivered by development			S106	0									
GI NFN 6.1	Broadland	Canhams Hill open space/GI provision as part of proposed development with opportunities to maintain and enhance the green space between Hellesdon and Drayton at Canhams Hill CWS. Included in feasibility study For Drayton & NW Forest & Heaths	Norwich Fringe North	Potentially Delivered by Development; Part of Feasibility Study For Drayton & NW Forest & Heaths			Dev	0									
GI NFN 7 BDC REF GI S7.1	Broadland	North-South GI Connectivity: Catton, Sprowston Spixworth	Norwich Fringe North	To be delivered through development				0									
GI NFN 8 BDC Ref GI S10.2	Broadland	West-East GI Connectivity: Catton, Sprowston Spixworth	Norwich Fringe North	To be delivered through development				0									

Communities

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									2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	
Community Facilities																			
CF1.2	Broadland	Brook & Laurel Farm Community Building	Requires Project Brief / Feasibility	500		200	S106/CIL	300									500		
CF1.3	Broadland	North Sprowston & Old Catton Community Space including library	Requires Project Brief / Feasibility	2,400		0	S106/CIL	2,400									2,400		
CF1.4	Broadland	Land South of Salhouse Road Community Building	Requires Project Brief / Feasibility	500		0	S106/CIL	500					-			500			
CF1.5	Broadland	Rackheath Community Building	Requires Project Brief / Feasibility	500		0	S106/CIL	500								500			
CF1.20	Broadland	Children's Playspace delivered through the development of allocations within the Growth Triangle	Delivered by development.	n/a		n/a	S106	n/a		x	x	x	x	x	x	x	x	x	
CF1.21	Broadland	Informal Open Space delivered through the development of allocations within the Growth Triangle	Delivered by development. Required to fulfil HRA public access to open space requirements.	n/a		n/a	S106	n/a		x	x	x	x	x	x	x	x	x	
BDC	Broadland	Cremer's Meadow	Project Development	25		0	CIL	25				25							
BDC	Broadland	Great Plumstead Open Space / Community Orchard	Project Development	25		0	CIL	25				25							
CF2.x	Norwich	Boom Towers		20		0	CIL	20		20									
CF2.x	Norwich	Bowthorpe Play		100		100	S106 & CIL n'hood	13		20	40	40							
CF2.x	Norwich	Castle Gardens	Feasibility and brief writing currently ongoing. £135k CIL maintenance money sought to add to £115k secure maintenance funding and justified through project proforma.	1155		1005	S106 (70 secure), HLF/EU (935 not secured)	150	0	50	500	320	680						
CF2.x	Norwich	Earlham Park toilets		80		80	CIL n'hood	0		40	40								
CF2.x	Norwich	Heigham Park toilets	Crowd funding?	80		80	CIL n'hood	0				80							
	Norwich	Improved sports facilities in Norwich	Pre-feasibility									x	x						
	Norwich	North City estate renewal		tbd				tbd				x	x	x	x				
	South Norfolk	Children's Playspace, Sports Pitches and Informal Recreation Space delivered through the development of allocations	Status review of open space / play projects is required				S106												
Libraries																			
CF1.3	Broadland	Community space including new library -North Sprowston & Old Catton	see above										X						
CF1.7	Broadland	Expansion of Sprowston Library					S106/CIL												
CF3.4	South Norfolk	Expansion of Long Stratton library	Awaiting developer contributions once development proceeds.				S106/CIL												
	Broadland	Wroxham Library self access improvement and parking	In build - estimated completion autumn 2018	43		43	CIL												

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									2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	
	Norwich	Plumstead Road Library self access improvement and parking	In build - estimated completion autumn 2018	85		85	CIL				40								
	South Norfolk	Diss Library self access improvement	In build - estimated June 2018	35		35	S106/CIL				40								
	South Norfolk	Harleston Library self access improvement	Planning started - estimated completion March 2019	35		35	CIL				35								
	South Norfolk	Costessey Library self access improvement	Planning started - estimated completion March 2019	35		35	CIL				35								
	South Norfolk	Loddon Library self access improvement	Planning started - estimated completion March 2019	35		35	CIL												
	Norwich	Earlham Library self access improvement	Planning started - estimated completion March 2019	35		35	CIL	35			35								
	Norwich	Mile Cross Library self access improvement	Planning started - estimated completion March 2019	35		35	CIL				35								
	Broadland	St Williams Way Library self access improvement		35			CIL	35			35								
	Broadland	Blofield self access improvement		43			CIL	43				43							
	Broadland	Reepham self access improvement		30			CIL	30				30							
	Norwich	Tuckswood self access improvement		43			CIL	43				43							
	South Norfolk	Hingham self access improvement		20			CIL	20				20							
Sports Facilities																			
CF1.6	Broadland	Extend and Refurbish Rackheath Pavilion	Requires Project Brief / Feasibility	TBC		TBC	CIL/Other	TBC			x								
CF1.8	Broadland	Modernisation of Thorpe St Andrew School swimming pool	Feasibility Study required	1,000			S106/CIL												
CF1.9	Broadland	New Sports Hall in Thorpe St Andrew	Feasibility Study required	2,700		1,900	S106/CIL	800			2,700								
CF1.10	Broadland	Refurbishment of 3G pitch in Thorpe St Andrew	Funding being sought from the FA				Other												
CF1.11	Broadland	Modernisation of Hellesdon High School sports hall					S106/CIL												
CF1.12	Broadland	Modernisation of Aylsham High School swimming pool					S106												
CF1.13	Broadland	Gym and Dance Hall contribution Aylsham					S106												
CF1.14	Broadland	Sports Hall Provision in Reepham	Feasibility Study required				S106												
CF1.15	Broadland	Modernisation of Sprowston High School Swimming Pool		1,000			S106/CIL												
CF1.16	Broadland	Modernisation of Sprowston High School Sports Hall	Feasibility Study required																
CF1.17	Broadland	A new sports hall in a growth area (such as Rackheath) co-located with a new secondary school	Masterplan developed, planning application expected Summer 2017	2,750															
CF1.18	Broadland	A new sports hall in Acle	Feasibility Study required	2,700			S106/CIL												
CF1.19	Broadland	New pitch provision in NEG T	Delivered by Development				S106												

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									2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24		2024/25
GI NFN 9 BDC Ref; GX15	Broadland	Improve Facilities at King George V Playing Field	Requires Project Brief / Feasibility	TBC			S106, CIL and Other											
CF2.x	Broadland	Horsford Manor Community Sports Hub	Consultation taking place	6,500			Premier League (?), CSF, others including poss. CIL			x	x	x						
	Broadland	Brundall recreational areas	Design required				S106/CIL			x	x	x						
CF2.x	Norwich	Bowthorpe Park MUGA and tennis court improvements	Design required	300			City Council Capital Programme					100	100	100				
CF2.x	Norwich	Football Pitch Improvements	Condition survey undertaken	100		0	CIL	100				25	25	25	25			
CF2.x	Norwich	Sloughbottom Park: Improved Changing facilities	Changing facility feasibility required	?		15	S106			?								
	Norwich	Norwich Parks Tennis expansion phase 1 - Eaton Park, Heigham Park, Harford Park, Lenham Rec court improvements, lighting provision, access improvements, community tennis programme - no maintenance requirement	Council capital approved, S106 received, LTA funding submission imminent.	395		395	City Council Capital, S106, LTA grant	0	0	0		395						
	Norwich	Norwich Parks Tennis expansion phase 2 - court improvements, lighting provision, access improvements.	Development required			???									???			
	Norwich	Improved sports facilities in North Norwich	Considerable development work and feasibility required									x	x	x				
CF3.x	South Norfolk	New Swimming Pool and Sports Hall in Diss	Scoping report being undertaken	10,000-12,000		6,800-8,800	CIL/other	3,200				1,600						
CF3.x	South Norfolk	Artificial Grass Pitch in Diss	Feasibility Required	500			CIL/Other					500						
PPS	South Norfolk	Improvements to Hales cricket and bowls clubhouse		160		10	CIL	30		30								
CF3.x	South Norfolk	New Pitches North Hethersett	Delivered by Development	?			S106			x								
CF3.x	South Norfolk	Long Stratton Sports Hub, pitch improvements	Feasibility Required	2,545		2,045	CIL/Other	500		2,545								
CF3.x	South Norfolk	New sports improvements (artificial grass pitch for football/rugby) in Wymondham	Discussions underway with Wymondham Town Council re AGP provision and improvements to natural turf pitches. FA keen to invest capital up to £500k	1,000			CIL/Football Foundation/SNC	250		1,000								
PPS	South Norfolk	Improvements to Wymondham (Ketts Park) tennis clubhouse		30			CIL			x								

Ref	District	Project/Scheme Description	Status	Total Estimated Project Cost		Contributory funding (£,000)	Source	Funding need	Spend Profile £'000s										Further	
									2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26		
	South Norfolk	Delivery of AGP and natural grass pitches by Wymondham Rugby Club (relocation and upgrade of facilities)	Wymondham Rugby Club planning permission granted on appeal in September 2016. Reserved Matters submitted December 2016. Plan for new site to be open for start of 2018/19 season	?		None	Developer & WRFC	0		x										
Waste Recycling Centres																				
	Broadland	Rackheath	Requires Project Brief / Feasibility	450			S106/CIL	450												
Policing																				
CI 1.1	Broadland	Police Deployment Base - Vicinity of Postwick Junction	Norfolk Constabulary Broadland Command Policing Plan	TBC			Other					x								
Health Care																				
HC4	Broadland	Sprowston / Old Catton Health and Social Care Facility	Infrastructure Needs and Funding Study 2009	3,350			Other	0									x			
HC5	Broadland	Rackheath Health and Social Care Facility	Infrastructure Needs and Funding Study 2010	3,350			Other	0					x							
HC6	Broadland	NE Norwich - Expansion of existing Heath and Social Care Facility	Infrastructure Needs and Funding Study 2011	TBC			Other	TBC												
Acle Neighbourhood Plan																				
NP1.1.1	Broadland	Improved foot and cycle links to countryside and surrounding villages	Requires Project Brief / Feasibility				CIL and Other													
NP1.1.2	Broadland	Improved access to Wherry Line - Pedestrian and Cycle access to Station and Facilities.	Requires Project Brief / Feasibility				CIL and Other													
NP1.1.3	Broadland	Traffic Calming and Pedestrian Crossing of A1064	Requires Project Brief / Feasibility				CIL and Other													
NP1.1.4	Broadland	Village Centre Public Realm Improvements inc. increasing pavement width and open space	Requires Project Brief / Feasibility				CIL and Other													
NP1.1.5	Broadland	Improvement to existing Pre-School Facility at Primary School	Neighbourhood Plan Project Requires Project Brief / Feasibility				CIL and Other													
NP1.1.6	Broadland	Improvements to Building and Sports Facilities	Requires Project Brief / Feasibility				CIL and Other													
Sprowston Neighbourhood Plan																				
NP1.4.1	Broadland	New Pedestrian and Cycle Link Plantation Drive to Harrison's Plantation (Via Cottage Plantation)	Requires Project Brief / Feasibility				CIL and Other													
NP1.4.2	Broadland	Community Hub - Diamond Centre	Feasibility Ongoing				CIL and Other		x											
NP1.4.3	Broadland	Public Realm Improvements at Wroxham Road Local Centre and Tree Planting along Wroxham Road	Requires Project Brief / Feasibility				CIL and Other													
NP1.4.4	Broadland	Public Realm Improvements inc. Traffic Calming Measures, Planting and review of on-street parking. School Lane, Sprowston	Requires Project Brief / Feasibility				CIL and Other													
Strumpshaw Neighbourhood Plan																				
NP1.5.1	Broadland	Community Room and Allotments	To be delivered through development				S106													

Ref	District	Project/Scheme Description	Status	Total Estimated Project Cost	Contributory funding (£,000)	Source	Funding need	Spend Profile £'000s												
								2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	Further		
NP1.5.2	Broadland	Toilet, Kitchen and Amenity Facilities at St Peters Church				CIL and Other														
Great and Little Plumstead Neighbourhood Plan																				
	Broadland	New Changing Rooms Gt Plumstead Playing Field	Requires Project Brief / Feasibility	TBC		CIL and Other														
	Broadland	Water Lane Footpath Improvements	Requires Project Brief / Feasibility	TBC		CIL and Other														
	Broadland	New Bus Stop opposite Bus Shelter	Requires Project Brief / Feasibility	TBC		CIL and Other														
	Broadland	Junction Improvements at Brick Kilns Public House	Requires Project Brief / Feasibility	TBC		CIL and Other														
	Broadland	Woodland Walk Extension at Thorpe End	Requires Project Brief / Feasibility	TBC		CIL and Other														
Brundall Neighbourhood Plan																				
	Broadland	Public Realm Improvements at Local Centres and Gateways	Requires Project Brief / Feasibility	TBC		CIL and Other														
	Broadland	Footway and Cycleway Improvements	Requires Project Brief / Feasibility	TBC		CIL and Other														
Drayton Neighbourhood Plan																				
	Broadland	Improved Off Street Public Parking at Village Centre	Requires Project Brief / Feasibility	TBC		CIL and Other														
	Broadland	Highway Improvements and Public Realm Enhancements at Village Centre	Requires Project Brief / Feasibility	TBC		CIL and Other														
	Broadland	Footway and Cycleway Improvements	Requires Project Brief / Feasibility	TBC		CIL and Other														
	Broadland	GI Improvements at Drayton Drewray, Canham Hill and Drayton Wood	Requires Project Brief / Feasibility	TBC		CIL and Other														
	Broadland	Improved Facilities at King George V Playing Field	Requires Project Brief / Feasibility	TBC		CIL and Other														
Blofield Neighbourhood Plan																				
	Broadland	Provision of New Community Green Assets: Woodland or Community Garden	Requires Project Brief / Feasibility	TBC		CIL and Other														
	Broadland	Secure Allotments in Perpetuity		TBC		TBC														
	Broadland	Public Realm Improvements at Village Gateways	Requires Project Brief / Feasibility	TBC		CIL and Other														
	Broadland	Community Hall	Requires Project Brief / Feasibility	TBC		CIL and Other														
	Broadland	Create Community Hub in Blofield and Blofield Heath	Requires Project Brief / Feasibility	TBC		CIL and Other														
	Broadland	Improvements to Hemblington Primary School, including identifying suitable pick up and drop off points	Requires Project Brief / Feasibility	TBC		CIL and Other														
	Broadland	Improvements to Blofield Primary School, including identifying suitable pick up and drop off points	Requires Project Brief / Feasibility	TBC		CIL and Other														
	Broadland	Improvements to Blofield Health Care Centre, including capacity and increased car parking.	Requires Project Brief / Feasibility	TBC		CIL and Other														
	Broadland	Improve Broadband Connectivity	Requires Project Brief / Feasibility	TBC		CIL and Other														

Ref	District	Project/Scheme Description	Status	Total Estimated Project Cost		Contributory funding (£,000)	Source	Funding need	Spend Profile £'000s								Further	
									2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24		2024/25
	Broadland	New Pedestrian Crossings at The Street, Plantation Road and Woodbastwick Road	Requires Project Brief / Feasibility	TBC			CIL and Other											
	Broadland	Footpath/Cycleway between Blofield and Blofield Heath	Requires Project Brief / Feasibility	TBC			CIL and Other											
	Broadland	Improve Pedestrian Access to Countryside	Requires Project Brief / Feasibility	TBC			CIL and Other											
	Broadland	Highway Improvements on The Street, including enhanced parking and crossing facilities.	Requires Project Brief / Feasibility	TBC			CIL and Other											
Old Catton Neighbourhood Plan																		
	Broadland	Junction Improvements at St Faiths Road and Fifers Lane	Requires Project Brief / Feasibility	TBC			CIL and Other											
	Broadland	St Faiths Road and Lodge Lane Junction	Requires Project Brief / Feasibility	TBC			CIL and Other											
	Broadland	Address traffic volumes, speed reduction and safe crossing on Church Street	Requires Project Brief / Feasibility	TBC			CIL and Other											
	Broadland	Spixworth Road Parking and Speed Reductions	Requires Project Brief / Feasibility	TBC			CIL and Other											
	Broadland	Crossing facility at St Faiths Road and Fifers Lane	Requires Project Brief / Feasibility	TBC			CIL and Other											
	Broadland	Reduce rat runnign on Oak Street	Requires Project Brief / Feasibility	TBC			CIL and Other											
	Broadland	Stop up St Faiths Road	Requires Project Brief / Feasibility	TBC			CIL and Other											
	Broadland	Orbital Link Road Access to NIA IE	Requires Project Brief / Feasibility	TBC			CIL and Other											
	Broadland	Additional Bus Stops and Benches	Requires Project Brief / Feasibility	TBC			CIL and Other											
	Broadland	New Footpath Link Woodham Leas and Priors Lane to Lodge Lane Infant School and Doctors Surgery	Requires Project Brief / Feasibility	TBC			CIL and Other											
Cringleford Neighbourhood Plan																		
NP2.1.4 (GI NFS 3.1 and 7.3)	South Norfolk	Demand for Cycling and walking facilities	Probably covered through Cycle City project?						x									
NP2.1.3	South Norfolk	Demand for Medical / Dentistry facilities	Unlikely to be delivered other than through NHS funding															
NP2.1.5	South Norfolk	3.8 hectare playing field to accommodate a cricket pitch, football pitches and Pavilion to include changing rooms.	Scheme allowed at appeal in January 2016. Land being promoted for sale (January 2017) by promoter but timescale uncertain							x								
NP2.1.6	South Norfolk	Cringleford Library facilities	All developers will be required to make provision for additional library facilities for the library service which serves the development. This will be funded through Community Infrastructure Levy															
NP2.1.7	South Norfolk	Allotment and Community Orchard	A possible site is indicated on the Proposals Map. Barratts to deliver as part of the S106 (although these discussions are not yet finalised)						x									

Ref	District	Project/Scheme Description	Status	Total Estimated Project Cost	Contributory funding (£,000)	Source	Funding need	Spend Profile £'000s								Further
								2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	
Mulbarton Neighbourhood Plan																
NP2.2.1	South Norfolk	Improved car parking management around the schools/GP surgery				CIL and Other										
NP2.2.2	South Norfolk	An improvement at the B1113/A140 Harford Bridge junction				CIL and Other										
NP2.2.3	South Norfolk	Improved footway and road maintenance in the village				CIL and Other										
NP2.2.4	South Norfolk	Reduced traffic speeds on existing residential streets and lanes in the village				CIL and Other										
NP2.2.5	South Norfolk	Cycle routes to Hethel Engineering Centre/Lotus and Norwich				CIL and Other										
NP2.2.6	South Norfolk	An improved bus service				CIL and Other										
Salhouse Neighbourhood Plan																
	Broadland	Development of an integrated village path network	Requires Project Brief / Feasibility	TBC		CIL and Other										
	Broadland	Enhancement of the village playing field	Requires Project Brief / Feasibility	TBC		CIL and Other										
Rackheath Neighbourhood Plan																
	Broadland	Opening up Newman Woods and other potential woodlands for wider community use	Requires Project Brief / Feasibility	TBC		CIL and Other										
	Broadland	Investigate the potential for improvements to Local Heritage Assets, including renovating the Old Scout Hut.	Requires Project Brief / Feasibility	TBC		CIL and Other										
	Broadland	Upgrade and update Stracey Sports Park with more equipment and a MUGA	Requires Project Brief / Feasibility	TBC		CIL and Other										
	Broadland	Modernise and refurbish Rackheath Village Hall	Requires Project Brief / Feasibility	TBC		CIL and Other										
	Broadland	Encourage development of new access point from the industrial estate onto Wroxham Road	Requires Project Brief / Feasibility	TBC		CIL and Other										
	Broadland	Investigate setting up a community transport scheme in the village	Requires Project Brief / Feasibility	TBC		CIL and Other										
	Broadland	Investigate potential for new crossing points on Green Lane West and others.	Requires Project Brief / Feasibility	TBC		CIL and Other										
Hellesdon Neighbourhood Plan																
	Broadland	Improve the quality of existing parks and open spaces throughout Hellesdon	Requires Project Brief / Feasibility	TBC		CIL and Other										
Easton Neighbourhood Plan																
	South Norfolk	New Village Hall/Community Centre	Requires Project Brief / Feasibility	TBC		CIL and Other										
	South Norfolk	Additional car parking for the primary school	Requires Project Brief / Feasibility	TBC		CIL and Other										
	South Norfolk	Foot bridge across the A47 dual carriageway	Requires Project Brief / Feasibility	TBC		CIL and Other										

Education

Ref	District	Project/Scheme Description	Status	Total Estimated Project Cost (£,000)	Contributory funding and Source		Funding shortfall	To fund from other sources	Spend profile £'000s											
					S106	Basic Need			to date	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	Post 2026	
	South Norfolk	Roydon Primary Extension to 420	Growth in Roydon/Diss area requires extension to 420	3,900	3,694			206	3,000		900									
EDU1/2	Broadland	Blue Boar Lane New Free School 420 Primary	Design stage and land transfer underway	7,600	5,800	1,800		0	3,840			2,560	1,200							
S106	South Norfolk	Trowse New 210 Primary	Design underway. Discussion with developer about construction access	5,000	800	4,200		0	2,580			1,720								
EDU21/S106	South Norfolk	Hethersett New 420 Primary	Design stage underway	8,000	4,500	3,500		0	500		3,750	3,750								
	Norwich	New Bowthorpe Primary School	Discussions with Norwich City Council on appropriate site	8,000	2,500		5,500					500	2,000	3,000						
	South Norfolk	Hethersett Junior reorganisation	Early design stage underway	4,600		3,600		1,000			500	2,050	2,050							
S106	South Norfolk	Wymondham High Extension	Next phase of masterplan underway	10,000	10,000			0	2,000		2,000	3,000	3,000							
EDU14/S106	South Norfolk	Wymondham New 420 Primary Silfield	Design stage underway	8,000	5,100	0		2,900	500			3,750	3,750							
		Mulbarton Primary expansion to 3FE	Masterplan complete. Awaiting pressure on pupil numbers	4,150									500	1500	2150					
	Broadland	Little Plumstead VA Primary Extension to 420	Planning Application	4,050	400		350	3,300			250	400	1,700	1,700						
S106 (NP 2.1.2)	South Norfolk	Hethersett High Extension	Masterplan first stage underway	8,000	1,754	5,036		210			500	500	2,000	2,000						
	Broadland	Hellesdon New 420 Primary	Waiting for development to commence	8,000	0	0	8,000							500	3,500	4,000				

Ref	District	Project/Scheme Description	Status	Total Estimated Project Cost (£,000)	S106	Basic Need	Funding shortfall	To fund from other sources	to date	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	Post 2026
EDU22	South Norfolk	Easton Primary Extension to 420	Awaiting further housing growth for permanent capital project	4,000	0	0	4,000					1,000	1,500	1,500					
	South Norfolk	Hingham Primary Mobile Replacement	Brief in draft	900			221	679				450	450						
EDU18 (NP 2.1.2)	South Norfolk	Cringleford New 420 Primary	Waiting for development to commence	8,000	0	0	8,000					500	3,500	4,000					
EDU25	South Norfolk	Long Stratton New 420 Primary	Waiting for development to commence	8,000	0	0	8,000							500	3,500	4,000			
EDU7 (9?)	Broadland	North Norwich New Secondary and existing schools	Preferred site identified. Waiting for development to commence.	26,000			26,000						2,600	2,600	2,600	2,600	7,800	7,800	
	Broadland	Blofield New 420 Primary	Discussions with Broadland/Parish on new site.	8,000			8,000					500	3,500	4,000					
EDU5	Broadland	Beeston Park New Free School 420 Primary #1	Waiting for development to commence	8,000			8,000					500	3,500	4,000					
EDU1/2	Broadland	South of Salhouse Road New 420 Primary	Waiting for development to commence	8,000			8,000									500	3,500	4,000	
EDU6	Broadland	Beeston Park New Free School 420 Primary #2	Waiting for development to commence	8,000			8,000										500	3,500	4,000
EDU1/2	Broadland	Rackheath New 420 Primary #1	Waiting for development to commence	8,000			8,000					500	3,500	4,000					
EDU1/2	Broadland	Rackheath New 420 Primary #2	Waiting for development to commence	8,000			8,000							500	3,500	4,000			
EDU1/2	Broadland	Land East of Broadland Business Park New 420 Primary	Discussions with land promoter	8,000			8,000									1,280	500	3,500	4,000

For more information or if you
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for Norwich City Council

0808 168 3000
for South Norfolk Council

Greater Norwich Infrastructure Plan
April 2017



APPENDIX 11

River Wensum SAC & Broads SAC Nutrient Budget
Calculator v1.1, completed for Anglia Square
scheme

Provided Separately

APPENDIX 12

Nutrient Neutrality: Interim policy led approach
towards allocation of potential mitigation headroom
(excerpt from Norwich City Council Planning
Committee Report, 14 December 2022)



Committee name: Cabinet

Committee date: 14/12/2022

Report title: Nutrient Neutrality: Interim policy led approach towards allocation of potential mitigation headroom

Portfolio: Councillor Harris, Deputy leader and cabinet member for social housing and Councillor Stonard, cabinet member for inclusive and sustainable growth

Report from: Executive director of development and city services

Wards: All

OPEN PUBLIC ITEM

KEY DECISION

Purpose

For Cabinet to consider how the range of options for which the mitigation secured through fitting more water efficient fittings into Council owned properties should be used and for Cabinet to consider an interim policy led approach for the apportionment of the mitigation.

Recommendation:

That Cabinet agrees to pursue option 7 and to endorse an interim policy led approach for the apportionment of any nutrient neutrality mitigation credits secured through fitting more water efficient fittings into Council owned properties, and to delegate authority to the Executive Director of Development and City Services, in consultation with both the cabinet member for social housing and the cabinet member for sustainable and inclusive growth to finalise such an interim approach subject to being satisfied as to the further technical work (including an Appropriate Assessment which is necessary to establish the robustness of the proposed approach) together with engagement with Natural England.

To note the indicative cost of the nutrient neutrality mitigation credits and to delegate authority to the Executive Director of Development and City Services, in consultation with both the cabinet member for social housing and the cabinet member for sustainable and inclusive growth, to determine the final cost at which nutrient neutrality mitigation credits shall be sold.

To agree the provisional list of sites set out in rows 1-10 of Appendix A as the priority sites for the credits to be offered and to delegate authority to the Executive Director of Development and City Services to award credits (having regard to the preferred priority sites) and to enter into legal agreements allocating credits to these sites subject to them securing planning permission.

To delegate authority to the Executive Director of Development and City Services, in consultation with both the cabinet member for social housing and the cabinet member for sustainable and inclusive growth to allocate credits to further sites provided the headroom exists to do so, subject to legal agreements and the site securing planning permission.

Policy framework

The council has five corporate priorities, which are that:

- People live independently and well in a diverse and safe city.
- Norwich is a sustainable and healthy city.
- Norwich has the infrastructure and housing it needs to be a successful city.
- The city has an inclusive economy in which residents have equal opportunity to flourish.
- Norwich City Council is in good shape to serve the city.

This report meets the “Norwich has the infrastructure and housing it needs to be a successful city” as well as “The city has an inclusive economy in which residents have equal opportunity to flourish corporate aims” priorities.

This report addresses the corporate priority 3 that Norwich has the infrastructure and housing it needs to be a successful city. In particular:

- to develop and regenerate strategic areas such as East Norwich and Anglia Square;
- to provide and encourage others to provide new homes, open spaces and infrastructure for residents;
- to make the best use of our Housing Revenue Account assets and resources, maximizing our income and spending wisely to provide easy to access, high quality services and support for our tenants and leaseholders; and
- to actively manage and invest in our Housing Revenue Account Homes so that they are safe, well maintained and energy efficient.

This report helps to meet the housing, regeneration and development objective of the COVID-19 Recovery Plan.

Report details

Background

1. The Dutch Nitrogen Case¹ ('Dutch-N'), heard in the Court of Justice of the European Union (CJEU), ruled that where an internationally important site (i.e., Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar Sites) is failing to achieve a favourable condition due to nutrient pollution, the potential for a new development to add to the nutrient load is "necessarily limited". The Dutch-N case has informed the way in which regulation 63 of the Habitats Regulation 2017 should apply to pollution related incidents. This has resulted in greater scrutiny of proposed developments that are likely to increase nutrient loads to internationally important sites where a reason for their unfavourable condition is an excess of a specific pollutant.
2. As a result, on the 16 March 2022 Natural England issued new guidance to a second tranche of local planning authorities concerning nutrient enrichment and the role local authorities must play in preventing further adverse impacts to protected wetland habitats. The importance of achieving nutrient neutrality stems from evidence that large quantities of nitrogen and phosphate nutrients entering water systems cause excessive growth of algae, a process called 'eutrophication.' This reduces the oxygen content of water which increases the difficulty of survival for aquatic species; subsequently removing a food source for protected species.
3. All eight Norfolk Authorities are affected to some degree with catchments identified in the Upper Wensum SAC and the Broads SAC. The entirety of Norwich's administrative area is included in the Broads catchment, with a small part in the north-west also covered by the Wensum catchment.
4. The sources of nutrients generally include sewage treatment works, septic tanks, livestock, arable farming and industrial processes. Where sites are already in unfavourable (poor) condition, extra wastewater from new developments can make matters worse.
5. Local Planning Authorities are now required to consider the impact of nutrient enrichment before planning permission can be granted and therefore all planning applications for certain types of developments² in the affected catchments have been put on hold until it can be demonstrated how they will mitigate any additional nutrients arising from them.
6. Developers will have to mitigate for any adverse phosphate or nitrate deposits as part of any planning application for additional accommodation within the Wensum Special Area of Conservation (SAC) and Broads SAC and take account of the Habitats Regulations.
7. In April 2022 the Norfolk Authorities agreed to work together to address this issue as all the Norfolk Authorities, and the Broads Authority area are affected. Royal

¹ *Joined Cases C-293/17 and C-294/17 Coöperatie Mobilisation for the Environment UA and Others v College van gedeputeerde staten van Limburg and Others*

² *It covers all types of overnight accommodation including new homes, student accommodation, care homes, tourism attractions and tourist accommodation and permitted development (which gives rise to new overnight accommodation) under the Town and Country Planning (General Permitted Development) (England) Order 2015.*

Haskoning were commissioned to assist with developing a mitigation strategy for Norfolk.

8. Agents and developers are being kept apprised of development of the mitigation strategy through forum meetings and information on each Council's website. Regular briefings are being provided to elected members.
9. Progress to date has been good: the catchment mapping has been refined to provide greater clarity for all parties on areas which are both in and out of the relevant catchments.
10. The Norfolk wide calculator has been produced in collaboration with Natural England. The Norfolk nutrient budget calculator is a catchment specific tool which has been varied to take into account regional variances from the Natural England calculator and is designed to rapidly calculate the nutrient loading from new residential development in the catchments of the River Wensum SAC and the Broads SAC. The Norfolk calculator utilises the best available scientific evidence and research alongside the latest nutrient neutrality guidance from Natural England (2022). As a result, some of the calculator inputs and assumptions deviate from those advised in the published guidance but there is a detailed guidance report to evidence the assumptions in the calculator. This calculator went live on Norwich's website in November.
11. Natural England has written confirming that it *'note[s] that the approach adopted in the Norfolk calculator is broadly consistent with that which underpins the Natural England nutrient budget calculator'* but with detailed comments on areas where there are differences including occupancy rates, water usage and Waste water Treatment Works (WwTW) discharge rates. In respect of these three areas Natural England advises that the Norfolk Authorities, as competent authorities must be satisfied that the evidence underpinning the assumptions in the Norfolk calculator is sufficiently robust and appropriate and advise that the Norfolk calculator is less precautionary than that of Natural England, but that ultimately *'Natural England do not intend to raise objection to the Norfolk Authorities using the Norfolk calculator to inform their Appropriate Assessments'*. Officers are of the view that the Norfolk calculator is sufficiently robust to justify the grant of planning permission and it therefore opens up the prospect of being able to determine currently stalled planning permissions where developers are able to demonstrate the level of mitigation required by the calculator. Officers are aware that across the affected catchment area several developers are exploring progressing planning applications by delivering on-site mitigation measures delivering the benefits required by the calculator. Whilst this may justify the release of some planning consents across the catchment, large strategic urban schemes are unlikely to be able to provide sufficient mitigation on-site.
12. The next stage is therefore to develop short-, medium-, and long-term mitigation solutions where on-site mitigation is not possible, and identify land where off-site solutions could be implemented to the greatest effect to mitigate nutrient loading from new developments. It is expected that draft reports on this will be commenced shortly, but these will need further consideration as to delivery mechanisms and further reports will likely be needed in Spring. It may be early summer before associated delivery solutions are confirmed and up and running. A joint venture is being considered by the Norfolk authorities and a separate report may be brought to Cabinet in due course. This joint venture will oversee the governance and administration of a catchment wide portfolio of NN mitigation

solutions, working with third parties such as Anglian Water and Water Resources East. Some solutions have been considered at a high level including the fitting of water efficient fittings in residential properties.

13. It is the intention that the above catchment wide solution will supersede the interim policy led approach to the allocation of nutrient neutrality credits that is proposed in this report. If, for any reason, the catchment wide solution does not prove feasible the Council may need to revisit the matter and identify a longer term policy for the application of any credits it may be in control of.

Mitigation available through Council owned Housing Stock

14. The installation of more water efficient fittings in bathrooms and kitchens in residential properties has been identified as a mitigation solution. When retrofitting water saving appliances, the water usage saved from the retrofitted properties will be replaced by the additional water from new dwellings. As a result, the volume of water entering the treatment works will stay the same and providing the treatment works operates to a permit limit, the effluent discharge concentration remains the same.
15. This solution is not applicable across the entire catchment area as it cannot be applied to wastewater treatment works (WwTWs) without a permit limit. For it to be effective WwTWs need to be operating at close to capacity with little headroom, which is not the case in all the treatment works in the catchment. However, the Whitlingham treatment works, to which almost all properties in Norwich discharge, typically does operate close to its permit limit and water efficiency measures fitted within its catchment would be effective at mitigating nutrients. Older houses generally have higher water usages per person and therefore have a greater potential for reducing nutrient loading.
16. This solution is only applicable to existing dwellings where an organisation, such as the Council, has control over properties, fittings, and any upgrade works. There may also be the possibility of Registered Providers and care providers also being able to retrofit their properties to generate credits.
17. Wastewater reductions from new water efficient appliances could be achieved during planned refurbishment and responsive repairs of such properties. The greater water saving is typically achieved through upgrades to bathrooms as opposed to kitchens, with improvements to toilets and showers providing the greatest reductions. Officers are confident that this solution could be executed in the Council's housing stock.
18. The Council owns approximately 14,500 Council houses and operates a rolling program of improvements to its Council housing, including upgrades to bathrooms and kitchens, both of which present an opportunity for more efficient fittings to be installed. The current 5yr programme has funding for the first 2 years during which some 763 properties are proposed for improvement, including works to bathrooms and kitchens. Additionally, the Council also installs new fittings as responsive repairs which are in addition to the Council's planned improvements program. Using the average over the last three years, it can be assumed that 493 dwellings would need some responsive repairs each year.
19. An average volume of water usage of around 150 l/person/day has been assumed for existing dwellings in the catchment. The WRc water efficiency

calculator (WRc, 2021) has been used to approximate the water usage per appliance / fitting for usage of 150 l/person/day. The findings are presented in **Table 1** below.

Table 1: Baseline (150 l/person/day) maximum water consumption values for fittings

Fitting	Maximum Consumption
Toilet	8 litres
Shower	12 l/min
Bath	200 litres maximum capacity
Basin Taps	9 l/min
Sink Taps	10.5 l/min

20. The Council's program of improvements currently installs fittings with a water usage of approximately 125 l/person/day. This represents a saving of approximately 25 l/person/day from the baseline. The maximum consumptions per fitting are presented in **Table 2**.

Table 2: Current (125 l/person/day) maximum water consumption values for fittings

Fitting	Maximum Consumption
Toilet	6 / 4 litres (dual flush)
Shower	9 l/min
Bath	200 litres maximum capacity
Basin Taps	8 l/min
Sink Taps	10.5 l/min

21. In order to maximise the nutrient mitigation potential of the retrofitting program, the Council will install more water efficient fittings going forward. These are expected to reduce the water usage to 106 l/person/day, representing a saving of approximately 45 l/person/day. The maximum consumptions to achieve this efficiency are presented in **Table 3**.

Table 3: Future (106 l/person/day) maximum water consumption values for fittings

Fitting	Maximum Consumption
Toilet	4 / 2.6 litres (dual flush)
Shower	8 l/min
Bath	170 litres maximum capacity
Basin Taps	5 l/min
Sink Taps	7 l/min

22. Requirement G2 and Regulations 36 and 37 of the Building Regulations (2015) introduce a minimum water efficiency standard for new homes of no more than 125 l/person/day. The Government also introduced an optional requirement of 110 l/person/day for new residential developments (excluding properties owned by local authorities and Registered Providers), which should be implemented through local policy where there is a clear evidence need. The City Council does apply conditions to planning permissions granted requiring new development to meet a water efficiency standard of 110l/person/day. However, this is not applicable to the fitting of water efficiency measures in existing housing stock as this is not subject to planning control.

23. Table 4 provides an approximate estimate for installing new fittings that will meet a water efficiency of 106l/person/day.

Table 4: Cost estimation for installing fittings to meet a water efficiency of 106 l/person/day

Fitting / Appliance	Approximate cost	Source
Toilet	£200 - £300 for a new dual flush toilet including labour. Retrofitting a traditional toilet with a dual flush mechanism may cost as little as £15.	https://www.thegreenage.co.uk/tech/water-saving-toilet/
Shower	£25 - £50	Water Efficient Showers How To Save Water (how-to-save-water.co.uk)
Bath	£250	How Much Does a Bathroom Renovation Cost in 2021? Checkatrade
Basin Taps	£100	How Much Does a Bathroom Renovation Cost in 2021? Checkatrade
Sink Taps	£100	How Much Does a Bathroom Renovation Cost in 2021? Checkatrade
Dishwasher	£300	Best dishwashers to buy 2021 - BBC Good Food
Washing Machine	£350	Top 5 Energy Efficient Washing Machines - Appliance City
Total	£1,450 per property	

24. The cost estimates of actual bathroom upgrades and sink tap replacements are currently being obtained from the Council's contractors. Once these are known a more accurate cost of the water efficiency improvement programme will be

known. Although the Council upgrades exclude dishwashers and washing machines, once labour costs are included costs in the same order of £1,450 are expected.

25. The planned 5yr programme sees 1,793 properties identified for planned upgrades to bathrooms and kitchens as well as 2,460 for responsive repairs. This would release 120.73 kg Total Phosphorus/yr and 3,353.58 kg Total Nitrogen/yr of mitigation, which is equivalent to approximately 1,412 new dwellings to be built. The calculations account for properties already completed since March 2022 to the current water efficiency specification.
26. The Council as landlord is in control of these properties and so can guarantee the perpetuity of the measures being installed, and the Council is also in control of the programme to ensure the mitigation is delivered in a timely manner. Essentially this means that the Council is in control of a form of mitigation which can be used to rapidly unblock some development up to the limit of the mitigation headroom.
27. In terms of nutrient neutrality mitigation this would require around 3 existing council dwellings to be retrofitted with improved water efficiency fittings to release 1 new dwelling (with a water efficiency of 110 l/person/day) draining to Whitlingham.
28. Based on the assumptions in **Table 4**, the mitigation cost per 1 new dwellings is estimated to be around £4,350 (3 x £1450). This figure will be refined once a more accurate cost of the water efficiency improvement programme is known. In practice the Norfolk Budget nutrient budget calculator would be used to determine the precise Total Phosphorus kg/yr (TP) and Total Nitrogen kg/yr (TN) mitigation requirements for a proposed development. The TP and TN headroom created by retrofitting would be apportioned and costed in kg/year units. The budget calculator has been used to calculate the mitigation budget requirements of a typical house and this allows an approximation of new dwelling headroom to be calculated.
29. Whilst not quantified at this stage, there is also likely to be some saving passed on to tenants of such properties as water usage would drop (this may only apply to those properties on water metres).

Monitoring

30. It will be essential for this programme to be monitored to ensure delivery of the mitigation in advance of the occupation of any new dwellings. The Council shall undertake detailed monitoring of the following during the course of this proposed mitigation:
 - the number of upgrades undertaken by the Council every quarter;
 - the drawdown of nitrate credits, both at grant of planning permission and at the point of occupation.

31. If monitoring indicates a need, it may be possible to accelerate the Council's planned water efficiency improvements in order to generate further wastewater headroom. Monitoring information will be published on the Council's website and updated periodically.

Implementation

32. The use of the Council's mitigation credit will require resourcing in order to cover the cost of the works. The Council intends to secure proportionate contributions from developers, to be collected and pooled through section 106 agreements and to secure that no benefitting developments can be occupied until the mitigation credit has been funded. The Council may also enter into direct contracts to award and secure the credits and, as set out within this report, it is recommended the Executive Director of Development and City Services be delegated authority to agree any such awards / contracts. Legal agreements will need to provide for inflationary increases in costs to be met.
33. All developments should also be subject to conditions to secure high water efficiency.

Options for mitigation

34. There are several possible developments which could be unblocked should the headroom created be allocated to them, and each option is set out below for Members' consideration.
35. A total of 52 development sites in Norwich alone are currently held up in the planning application process which would, if planning permission was granted, release 1623 new dwellings, including the 1100 dwellings at Anglia Square. These figures rise into the thousands when taking the rest of Norfolk into account. The following options have been identified:
36. **Option 1 – To allocate the mitigation on a first come first serve basis (on agreement of the developer to pay the cost associated):** There are some planning applications which could be granted once mitigation for Nutrient Neutrality is addressed. These comprise 24 applications for planning permission which would deliver 132 dwellings. Some of these planning applications may require a decision by Planning Applications Committee whilst others could be determined under delegated powers. Each application would need to enter into a legal agreement prior to the planning permission being issued to pay the cost per new dwelling for the nitrate credit mitigation before permissions could be released. The advantage of this options is that it would utilise the available headroom to the quickest possible timetable. However, the disadvantage is that it runs the risk of strategically significant developments remaining stalled whilst less significant developments are allowed to proceed. It is not favoured for this reason.
37. **Option 2 - Auction the mitigation headroom to the highest bidder – i.e., seek to maximise the financial benefit the HRA gets from an asset it owns:** This option would realise an increased income to the HRA to fund both this programme of works and future works but is not without its risks. The Council may suffer reputational damage and be seen to be profiting from provision of the mitigation and could lead to a bidding war rather than see the best type of

development brought forward. It is not favoured for this reason.

38. Option 3 - Retain the mitigation headroom for the HRA's own development:

This option would see mitigation released for schemes such as Argyle Street and Mile Cross where important affordable housing is to be provided. It would also enable the longer term pipeline of HRA development to be delivered over time. However, this option would fail to maximise the strategic benefits possible that arise from the Council being in control of a deliverable nitrate mitigation solution at this point in time. Given that a catchment wide mitigation solution is expected to have been established by the summer of 2023 at a broadly similar order of costs per property as the current proposal, this option would fail to maximise the immediate benefits that could be delivered by releasing strategic planning permissions in the shorter term. For this reason it is not favoured.

39. Option 4 - Allocate the mitigation headroom for specific developments where strategic benefits are considered to best align with corporate priorities (on agreement of the developer to pay the cost associated):

There are long standing allocated sites of strategic importance across the city and this would enable significant housing numbers to be granted planning permission (subject to all other planning matters being addressed) and realise economic investment and social and environmental benefits to the city. The Corporate Plan refers to two specific regeneration schemes: Anglia Square and East Norwich. A valid planning application for the redevelopment of Anglia Square was received in April 2022 and it is capable of being determined in Spring 2023. East Norwich is generally not as advanced in the planning process with masterplan having been endorsed by Cabinet in 2022. No valid planning application has been received for the Carrow Works site and there is little prospect of determination prior to summer 2023. The Deal Ground and May Gurney sites both have outline planning consent that was issued in 2012, preliminary discussion are underway about future reserved matters applications.

The corporate plan also refers to the activities of the Council's wholly owned housebuilder Norwich Regeneration Ltd (NRL). NRL are active in building out a strategically significant site in Bowthorpe, providing private and affordable homes. They are also seeking to develop a smaller site on Ber Street for homes for private sale. Their proposed business plan is due for consideration at this meeting.

There would clearly be significant benefits if one or more strategically significant development could be released under this option. However, the scale of the headroom available will be insufficient to allow East Norwich to proceed and if it were allocated just to strategically significant developments this risks failure to maximise the development released by the headroom currently available. For this reason it is not favoured although it should be noted that the favoured option would allow some developments mentioned above to proceed.

40. Option 5 – Add the mitigation headroom created to the Norfolk Joint Venture portfolio of solutions for other authorities to also access. This option 5 however, would not allow for an earlier release of strategic planning permissions within Norwich. All planning decisions would need to await the agreement of the catchment wide portfolio of NN mitigation solutions which could

take significant time to resolve and therefore undermine the objectives of the strategy. For this reason it is not favoured.

41. **Option 6 Allocate the headroom to those projects identified under the revolving fund under the Towns Fund project:** These sites are sites which are not necessarily strategic in nature as individual sites, but which collectively would have significant benefits for the City if unlocked. These sites comprise a blight to the urban character of the city and are prime development locations. Ensuring NN could be mitigated would alleviate yet another barrier to their development. However, as things stand the City Council has not been able to acquire any of these sites voluntarily and in view of the time that contested compulsory purchase orders take to pursue there is not considered an immediate benefit from allocation of the headroom created by the known mitigation. Progress on two of these sites is being reported separately to this meeting.

Owing to the likely delays in bringing forward these sites seeking to allocate headroom specifically to these sites is not favoured. However, it should be noted that the favoured option below would allow credits to be apportioned to such sites subject to the planning process.

42. **Option 7 – Apportion the mitigation in accordance with a criteria based interim policy led approach.** The use of a criteria-based policy led approach against which to decide on the apportionment of the mitigation would ensure fairness and transparency.

43. Advantages of the policy approach are two -fold. Firstly, the approach allows, in the circumstances where the amount of proposed development exceeds the mitigation headroom, for criteria to be applied to prioritise schemes. Secondly it allows planning applications to be identified that could benefit from the mitigation, and for applicants to be invited to express an interest in utilising mitigation available through the Norwich City Retrofit scheme. This gives applicants greater certainty regarding the cost of mitigation, the timescale for a planning decision and, where necessary, for progress to be made on site-specific Habitat Regulations Assessment.

44. Such an approach is likely to be established more quickly in relation to the headroom established by the known water efficiency programme than the wider catchment wide series of credits. It therefore has the potential to allow certain developments to be granted planning permission and to proceed quicker to delivery than would otherwise be the case. It is anticipated that any policy would only operate on a temporary basis and any unused headroom could be incorporated into the emerging catchment wide scheme.

Proposed Policy Led Approach for apportionment of mitigation

45. It is recommended to Members that option 7 is utilised until the wider catchment mitigation solution is available. Appendix A includes a list of all current planning applications that propose development requiring nutrient neutrality mitigation. Also included within the list are developments that are known to be in the pipeline and expected to be submitted and ready for determination before summer 2023.

46. The list includes 54 planning applications/sites comprising a total of 1806

dwellings, 513 student beds, 95 hotel beds, 10 care home bed spaces and 3 gypsy and traveller pitches. The amount of development exceeds the available mitigation headroom. As a result, the proposed developments have been assessed against the following criteria, in sequential order:

- Is the development housing-led, delivering general needs C3 dwellings or gypsy and traveller pitches?

Justification: development which contributes to meeting the council's 5-year housing land requirement or meets the legal duty to provide gypsy and traveller pitches.

- Is the development on an allocated site or one proposed for allocation in the submitted Greater Norwich Local Plan?

Justification: sites that serve a strategic purpose in meeting housing need.

47. The application of these criteria results in a group of 10 sites being identified. These are then assessed against further criteria: whether they deliver affordable housing; whether there is a wider regeneration benefit associated with the development of the site, and finally ranked according to number of dwellings.

48. This criteria-based assessment results in developments on rows 1-10 of the table being identified, in order of priority, for apportionment of mitigation. These 'priority' developments would utilise approximately 1392 of the estimated 1412 new dwelling headroom.

49. It is recommended that applicants of the 'priority' developments should be invited to express an interest in utilising mitigation available through the Norwich City Retrofit scheme. Applicants would be required to provide a calculation of the nutrient budget mitigation requirements of their developments. This would enable verification of the availability of headroom and allow for the cost of the mitigation to be calculated.

50. Details of when any payment would need to be made (commencement or occupation) will be determined as part of the application process and secured in any related S106 agreement.

51. 'Priority' developments include the current Anglia Square planning application (ref: 22/00434/F) which would account for 1100 of the total available headroom figure for new dwellings. This is a significant proportion of the mitigation credit. The application performs strongly against each of the assessment criteria. The proposed 1100 dwellings (including up to 110 affordable homes (10%)) can make a very substantial contribution to housing supply and addressing housing need. The redevelopment of the site is a long held strategic objective of the Council as expressed through development plan policies and associated guidance over the years. Furthermore, the proposal represents the largest development scheme proposed in the city centre since Chapelfield. In the event of planning approval being granted in the first half of 2023, the £280+ million construction project would offer immediate prospects of boosting the city's economy. With demolition commencing late 2023 and construction continuing for the next 8 years. The development is predicted to create substantial job opportunities and result in transformative change in this part of the city. The proposed scheme includes replacement commercial floorspace, a new enlarged public square and public

realm improvements to surrounding streets and under the flyover. These changes along with the new resident population will materially impact the medium and long-term viability and vitality of the wider Anglia Square /Magdalen Street district centre.

52. In addition, the Anglia Square proposal benefits from a Housing Infrastructure Fund (HIF) grant offer awarded by Homes England. The grant arrangement is time limited and unless development starts on site shortly, there is a material risk that this funding will be lost. The HIF grant is scheme specific and cannot be applied to other schemes elsewhere in the city. Anglia Square is a complex site and without the HIF grant the scheme will not deliver a significant number of homes which support the Council's strategic regeneration objectives. It is also possible, in these circumstances, that the scheme would not proceed at all.
53. It is therefore recommended that the mitigation secured through fitting water efficiency measures into Council owned housing stock is offered to the 'Priority' developments. Developments listed in rows 11-47 of the table in Appendix A, provide housing but are not on allocated sites, these have been ranked according to dwelling numbers. Should any of the 'priority' development associated planning applications slip or be refused they would be deemed no longer suitable for allocation of the headroom. Depending on the timescale, mitigation may then be available to these developments.

Consultation

54. A meeting has taken place with Natural England who have advised that the proposed Norwich retrofit NN mitigation scheme will need to be subject to a formal Habitat Regulations Assessment (HRA) and Appropriate Assessment (AA). This will require formal consultation with Natural England. It is anticipated that this will be undertaken within a timescale to enable the scheme to be made available to applicants by March 2023.
55. The Council has sought further legal advice in relation to the requirement for consultation. A verbal update will be given to Cabinet about whether specific consultation is required on the proposed interim policy led approach.

Implications

Financial and resources

56. Any decision to reduce or increase resources or alternatively increase income must be made within the context of the council's stated priorities, as set out in its Corporate Plan 2022-26 and budget.
57. If accepted the proposals in this report may result in up to £6.142m additional unbudgeted income (based on cost of £4,350 per property and 1,412 headroom created) being received by the Housing Revenue Account through works that it had already committed to funding through its capital programme.
58. The actual amount will depend on the number of dwellings released by each development and the finally agreed 'levy rate'.
59. The implications of this additional income would need to be considered through the HRA business planning process and is not considered further here; including

determining whether the income is of a capital or revenue nature. There would be some monitoring and legal costs which have not been estimated at this stage but are expected to be only a fraction of the potential income.

Legal

60. A Habitats Regulations Assessment (HRA) refers to the several distinct stages of Assessment which must be undertaken in accordance with the Conservation of Habitats and Species Regulations 2017 (as amended). This is a legal duty on planning authorities.
61. All plans and projects (including planning applications) which are not directly connected with, or necessary for, the conservation management of a habitat site, require consideration of whether the plan or project is likely to have significant effects on that site. This consideration – typically referred to as the ‘Habitats Regulations Assessment screening’ – should consider the potential effects both of the plan/project itself and in combination with other plans or projects. Where the potential for likely significant effects cannot be excluded, a competent authority must make an appropriate assessment of the implications of the plan or project for that site, in view of the site’s conservation objectives.
62. As stated in the background to this report, the Dutch-N case has informed the way in which regulation 63 of the Habitats Regulation 2017 should apply to pollution related incidents. This has resulted in greater scrutiny of proposed developments that are likely to increase nutrient loads to internationally important sites where a reason for unfavourable condition is an excess of a specific pollutant.
63. Local Planning Authorities are now required to consider the impact of nutrient enrichment before planning permission can be granted. The assessment of appropriate mitigation through the Habitats Regulations Assessment and Appropriate Assessment can only be undertaken when such mitigation is identified and secured.
64. There are additional potential legal risks around the Council seeking to adopt the proposed interim policy to guide the approach to the apportionment of the headroom. In drafting of this report the Council has obtained independent legal advice to seek to minimise these risks.

Summary of Independent Legal Advice

65. The legal advisors have highlighted that the Council’s approach here is novel, in that aspects of this approach are untested, and therefore somewhat at risk of legal challenge.
66. The legal advice has considered the options appraised as above, and this draft report. It has highlighted that the Council’s approach seeks to take a fair and equitable apportionment of initial mitigation credits whilst developing a longer term policy approach (as outlined in paragraphs 12 and 13 above). The interim policy led approach should provide sufficient scope to provide for allocation outside of the initial identified sites; there is still scope within the proposal for smaller allocations, and as highlighted in paragraph 53, if initial sites do not come forward there would be the ability to allocate to alternative sites.

67. The advice has further highlighted the potential that sites may still be given permission without necessary mitigation measures in respect of a negative habitat risk assessment where there are “imperative reasons of overriding public interest”. Whilst this may be applied in very limited circumstances this could still present an option in the most critical of situations where mitigation is not otherwise available.
68. The advice has also addressed the potential that this proposal falls under the scope of the subsidy control regime. Again, this is an untested area of law that does not come into full effect until January. In the meantime, the Council considers that this is a non-economic activity in that it falls under the scope of the Council’s functions to allocate mitigation in considering nutrient neutrality and therefore outside the scope of the subsidy control regime. It should be noted that option 2 above could fall under the scope of subsidy control if that route was preferred.
69. Finally, the legal advice explores the need to secure developer contributions for mitigation payments. As highlighted in paragraph 50, this will be secured through the planning and s.106 process.

Statutory considerations

Consideration	Details of any implications and proposed measures to address:
Equality and diversity	There are no implications with regard to equality and diversity and therefore no measures proposed. An EqIA is not required
Health, social and economic impact	There may be a small reduction in water bills for residents of Council owned housing stock as a result of the works done to reduce water flows from fittings.
Crime and disorder	There are no implications with regard to crime and disorder and therefore no measures proposed.
Children and adults safeguarding	There are no implications with regard to safeguarding and therefore no measures proposed.
Environmental impact	The use of more water efficient fittings in Council owned residential properties will provide wider benefits for both tenants in terms of reducing water bills but also the environment. Pollution of waterways has been highlighted as an issue and addressing nutrient pollution from development will have a positive impact on waterways more generally but particularly the identified important sites.

Risk management

Risk	Consequence	Controls required
Failure to address the requirement to address NN mitigation.	Development plans for the site may stall if a solution to NN cannot be found. Homes England may withdraw the £15m HIF funding secured.	Introduction of the policy led approach proposed
Reputational risk	The Council may be seen to be favoring one development over another	This report sets out several options which are open to members in terms of ring-fencing this mitigation source. This decision is not a decision on any planning application. That will be determined by officers or Planning Applications Committee in due course. The policy led approach to determining allocation of headroom will not be considered to be material to the planning determination.
Legal risk	The Council may be subject to a legal challenge over its proposed approach	The Council's approach has been subject to specific and specialist legal advice as set out above

Other options considered

70. Alternatives to the recommendation have been set out in the report.

Reasons for the decision/recommendation

71. As set out above.

Background papers: None

Appendices: Appendix A – Application of suggested policy approach to current and emerging planning proposals

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Appendix A – Application of suggested policy approach to current and emerging planning proposals

Sites listed include pending valid applications and other known proposals considered likely to be determinable before late summer 2023. Inclusion on the list should not be taken to give any indication as to how any application will be determined. Whether or not the site meets the policy will not be considered material in relation to how any application is determined.

	Application number	Address	General needs housing/gypsy & traveller led?	Allocated Site?	Affordable housing?	Regeneration of a derelict site	Dwellings	Student beds	G&T pitches	Hotel beds	Care home beds
1	22/00434/F	Anglia Square (including land and buildings to the north and west)	Y	Y	Y	Y	1100				
2		Phase 1 of the site for the former Mile Cross Depot	Y	Y	Y	Y	76				
3	22/00108/MA	120 - 130 Northumberland Street	Y	Y	Y	Y	36				
4	22/00762/F	Land and buildings including 70 - 72 Sussex Street & land north side of 148 Oak Street	Y	Y	Y	Y	34				
5		Three Score Phase 4	Y	Y	Y	N	94				
6	22/00273/F	Land off Argyle Street	Y	Y	Y	N	14				
7	22/00392/F	Land at Swanton Road	Y	Y	Y	N			3		
8	22/00272/F	10 - 14 Ber Street	Y	Y	N	Y	9				
9	22/01471/F	Earl of Leicester (site of), Dereham Road	Y	Y	N	Y	9				
10	20/00998/F	126 - 128 Barrack Street	Y	Y	N	N	17				
11	20/01579/F	The Children's Centre, 40 Upton Road	Y	N	Y		23				
12	22/00933/O	Land west of Eastgate House, 122 Thorpe Road	Y	N	Y		19				
13	21/00182/F	20 Cowgate	Y	N	Y		15				

14	21/00007/F	10 to 12 London Street	Y	N	N		14				
15	21/01655/F	100 Magdalen Street	Y	N	N		13				
16	22/00989/PDR	15 - 17 Haymarket	Y	N	N		13				
17	22/00380/F	85 - 87 Cadge Road	Y	N	N		9				
18	22/00157/F	Land north of 1 Dell Crescent, Dereham Road	Y	N	N		8				
19	22/00937/F	Land to the west of Crome Road	Y	N	N		8				
20	16/01670/F	Former Bethel Hospital, Bethel Street	Y	N	N		5				
21	22/00622/PA	Norfolk Clinic, 38 - 40 Magdalen Road	Y	N	N		5				
22	22/00363/F	Car park and premises between 25 and 27 St Leonards Road	Y	N	N		4				
23	22/00389/F	Richmond House, 244 Queens Road & 1A Bracondale	Y	N	N		4				
24	22/00491/F	74 St Faiths Lane	Y	N	N		3				
25	22/01002/F	Scotts Yard, Ber Street	Y	N	N		3				
26	22/00086/F	155 Waterloo Road	Y	N	N		3				
27	22/00519/PA	90 St Faiths Lane	Y	N	N		2				
28	22/00238/PA	37 Plumstead Road	Y	N	N		2				
29	22/00176/F	8 Redwell Street	Y	N	N		2				
30	22/00778/PA	27 Cattle Market Street	Y	N	N		1				
31	22/00127/F	The Valley, Heathside Road	Y	N	N		1				
32	22/00551/F	9 Cheyham Mount	Y	N	N		1				
33	22/01207/F	15 Willow Lane	Y	N	N		1				
34	22/00870/O	The Bungalow, Eaton Chase	Y	N	N		1				
35	22/00166/U	Wedgewood Guest House, 42 St Stephens Road	Y	N	N		1				
36	22/00058/F	36 Cotman Road	Y	N	N		1				

37	22/01102/F	60 Thorpe Road	Y	N	N		1				
38	21/01379/U	The Windmill, Knox Road	Y	N	N		1				
39	22/00356/F	183A Newmarket Road	Y	N	N		1				
40	22/00587/VC	Annexe at 137A Newmarket Road	Y	N	N		1				
41	22/00764/F	20 Waring Road	Y	N	N		1				
42	22/01010/F	2 Langton Close	Y	N	N		1				
43	22/00646/F	Clarence House, 6 Clarence Road	Y	N	N		1				
44	22/00604/F	44 - 46 Surrey Street	Y	N	N		1				
45	22/01184/U	Cat and Fiddle, 105 Magdalen Street	Y	N	N		1				
46	22/01257/F	Harford Manor House, Harford Manor Close	Y	N	N		1				
47	21/01440/F	549 Earlham Road	Y	N	N		1				
48	22/00243/F	Former Eastern Electricity Board Site, Duke Street	N	Y	N		237	480			
49	22/00545/F	Holmwood Residential Care Home, 11 Harvey Lane	N	N	N						10
50	22/00958/F	2 & 2A Winter Road, Norwich	N	N	N						
51	22/00396/F	Shoemaker Court, Enfield Road	N	N	N			33			
52	21/00942/F	Ailwyn Hall, Lower Clarence Road	N	N	N					94	
53	21/01196/O	Norwich Airport, Amsterdam Way	N	N	N						
54	22/01067/F	The Castle, 1 Spitalfields	N	N	N					1	
	TOTAL						1806	513	3	0	10

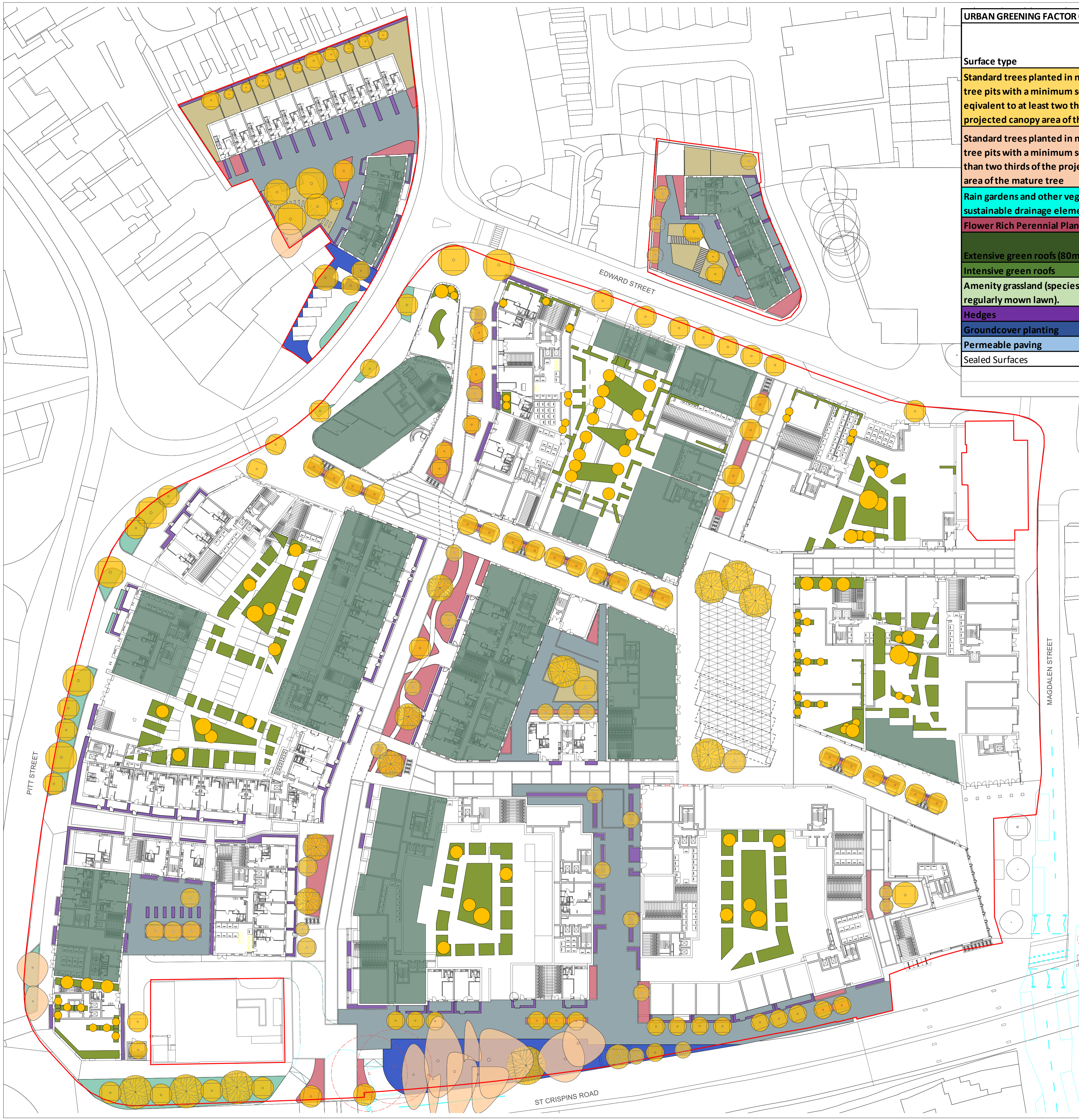
APPENDIX 13

Anglia Square Open Space & Recreational Routes
Info for Residents, January 2023

Provided Separately

APPENDIX 14

Urban Greening Factor Plans (Rev A and Rev C)



URBAN GREENING FACTOR CALCULATIONS				
Surface type	Area	Total Area	UG Factor	Sum (Total Area x Factor)
Standard trees planted in natural soils or tree pits with a minimum soil volume equivalent to at least two thirds of the projected canopy area of the mature tree	3552	3552	0.8	2841.6
Standard trees planted in natural soils or tree pits with a minimum soil volume less than two thirds of the projected canopy area of the mature tree	1036	1036	0.6	621.6
Rain gardens and other vegetated sustainable drainage elements	710	710	0.7	497
Flower Rich Perennial Planting	1125	1125	0.7	787.5
Extensive green roofs (80mm substrate)	6859	6859	0.7	4801.3
Intensive green roofs	2310	2310	0.8	1848
Amenity grassland (species-poor, regularly mown lawn).	994	994	0.6	596.4
Hedges	655	655	0.6	393
Groundcover planting	866	866	0.5	433
Permeable paving	3455	3455	0.1	345.5
Sealed Surfaces	24932	24932	0	0
		46494	TOTAL:	13164.9
			/site:	0.28315266

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NOTES:
 1. Do not scale from this drawing.
 2. Always work to noted dimensions.
 3. All dimensions are in millimetres unless otherwise stated.
 4. All setting out, levels and dimensions to be agreed on site.
 5. The dimensions of all materials must be checked on site before being laid out.
 6. This drawing must be read with the relevant specification clauses and detail drawings.
 7. Order of construction and setting out to be agreed on site.

- Standard trees planted in connected tree pits with a minimum soil volume equivalent to at least two thirds of the projected canopy area of the mature tree (0.8)
- Standard trees planted in pits with soil volumes less than two thirds of the projected canopy area of the mature tree (0.6)
- Rain gardens and other vegetated sustainable drainage elements (0.7)
- Flower-rich perennial planting (0.7)
- Extensive green roof with substrate of minimum settled depth of 80mm – meets the requirements of GRO Code 2014. (0.7)
- Intensive green roof or vegetation over structure. Substrate minimum settled depth of 150mm (0.8)
- Amenity grassland (0.4)
- Hedges (line of mature shrubs one or two shrubs wide) (0.6)
- Groundcover planting (0.5)
- Permeable paving (0.1)
- Sealed surfaces (0)

Revision	Date	Description	Drawn	Apprvd.
P01			JV	JK

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Client **Weston Homes**

Project **Anglia Square**

Drg Title **Urban Greening Factor**

Created on **15.08.22** Created by **JV** Approved by **DF**

Scale **1:500** Size **A1** Workstage **PLANNING**

Drg No. **ANG-PLA-XX-DR-L-9001** Suitability **S4** Revision **P01**