

Hopkins Ecology

Site: New Wastewater Treatment Works,
Beeston St Andrew, Norwich

Item: Ecological Impact Assessment

Client: Quinn Estates

Author: Dr GW Hopkins FRES CEnv MCIEEM
Date: 12 February 2024

Hopkins Ecology Ltd, St George's Works, 51 Colegate, Norwich NR3 1DD
T. 01603 435598 M: 07481 477103 E: W: www.hopkinsecology.co.uk

CONTENTS

SUMMARY	1
1. INTRODUCTION	2
2. METHODS	3
3. DESIGNATED SITES	5
4. PHASE 1 DESCRIPTION	8
5. SPECIES	10
6. DISCUSSION	12
7. CONCLUSIONS	14
8. APPENDIX 1: PHOTOGRAPHS	15
9. APPENDIX 2: LEGISLATION	16

SUMMARY

Hopkins Ecology Ltd was appointed by Quinn Estates to prepare an ecological impact assessment for a new Wastewater Treatment Works at Beeston St Andrew. This treatment works is for the proposed Beeston Park residential scheme and is part of a wider strategy to meet nutrient neutrality requirements.

The Site itself is a roughly rectangular plot within an arable field, ~100 west of a proposed new constructed wetland, and ~200m west of Dobbs Beck. The Site area (excluding the existing access track) is ~0.1ha in area.

The habitats on-Site are arable cropland, a short length of hedgerow plus sparse vegetation along the access track. A larger block of ephemeral / short perennial vegetation lies north of the track.

The hedgerow alongside the track qualifies as a priority hedgerow Habitat of Principal Importance, but no other priority habitats are present.

The Site is of very low ecological value in terms of its habitats, of value at the local scale only.

The species scoped in are:

- Foraging bats.
- Nesting birds.

All of these species would be present in very low numbers, as minor components of larger local populations, and the Site is without particularly scarce or specialist resources or features. The Site is of very low value for species, of value at the local scale only.

The scheme will have access off the track and the treatment works infrastructure will be located centrally with surrounding landscaping. The impacts of the scheme are considered to be very low and of negligible significance.

The follow construction phase mitigation requirements are identified:

- Nesting birds will require consideration in advance of vegetation clearance if this is undertaken during the March to August period inclusive. It is not expected that woody vegetation removal is required, and although the risk of ground-nesting birds is low they would be relevant to this mitigation (within the Site and if the compounds are to the north).
- Reptiles. The likelihood of grass snakes is considered sufficiently low for formal mitigation to not be required. However, if works are not to commence until 2025 and the vegetation to the north develops a ranker character with tussocks then a phased displacement approach to clearance should be undertaken.

Soft landscaping is the most appropriate Site-wide enhancement, and an extensive area of high value landscaping is included within the scheme.

The residual impacts of the scheme are considered to be positive based on the substantial increase in non-arable vegetation.

1. INTRODUCTION

BACKGROUND

- 1.1 Hopkins Ecology Ltd was appointed by Quinn Estates to prepare an ecological impact assessment for a new Wastewater Treatment Works at Beeston St Andrew. This treatment works is for the proposed Beeston Park residential scheme and is part of a wider strategy to meet nutrient neutrality requirements.
- 1.2 The Site itself is a roughly rectangular plot within an arable field, ~100 west of a proposed new constructed wetland, and ~200m west of Dobbs Beck. The Site area (excluding the existing access track) is ~0.1ha in area.

SITE CONTEXT

- 1.3 The Site is located on part of an arable field on slightly elevated terrain, 3-5m above the valley bottom of Dobbs Beck. The Site is within the *Central North Norfolk National Character Area*¹, which is characterised as a “*gently undulating rural landscape ... with long-settled agricultural character, where arable land is enclosed by winding lanes and hedgerows, interspersed with woodland and remnant heath and dissected by lush pastoral river valleys*”.

HABITATS AND SPECIES PROTECTION

- 1.4 The following key pieces of nature conservation legislation are relevant to legally protected species:
 - The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations); and
 - The Wildlife and Countryside Act, 1981 (as amended).
- 1.5 Also, the National Planning Policy Framework (MHCLG, 2023²) requires local authorities to avoid and minimise impacts on biodiversity and, where possible, to provide net gains in biodiversity when making planning decisions. A substantial number of species are of conservation concern in the UK. A small number of these species are fully protected under the legislation listed above, but others in England are recognised as Species of Principal Importance under the Natural Environment and Rural Communities Act 2006 and reinforced by the National Planning Policy Framework. For these species local planning authorities are required to promote the “*protection and recovery*” via planning and development control. Examples include the widespread reptiles, skylarks and soprano pipistrelle and, brown long-eared bats.
- 1.6 Although the NPPF has an overarching aim of minimising impacts to biodiversity, the majority of species of conservation concern are not specifically recognised by legislation or planning policy. The level of protection afforded to these is undefined and should be considered within the overall aim of minimising impacts on biodiversity.

¹ Natural England (2014) *NCA Profile 78: Central North Norfolk*. Available from: http://www.naturalengland.org.uk/publications/nca/central_north_norfolk.aspx

² MHCLG (2023) *National Planning Policy Framework*. Ministry for Housing, Communities and Local Government, London.

2. METHODS

PROJECT TEAM

- 2.1 The ecology team is led by Dr Graham Hopkins FRES CEnv MCIEEM. Experienced associates have been used for some survey work as required.

DATA SEARCH

- 2.1 A data search for a 2km radius around the constructed wetland Site was commissioned from the Norfolk Biodiversity Information Service and also included a review of relevant data and information from other sources (Table 1). Surveys were undertaken in 2023 of the proposed constructed wetland and these are referred to as appropriate.

Table 1. Overview of desk study data sources.

Source	Information
Norfolk Biodiversity Information Service	Designated sites, species of conservation concern; 2km search radius. Commissioned October 2023.
MAGIC (www.magic.gov.uk)	Additional information on statutory sites, habitats of principal importance and wider countryside information.
Greater Norwich Area and Broadland DC planning policy documents	Information regarding local planning policies, in particular green infrastructure and site impacts.
PINS website (https://infrastructure.planninginspectorate.gov.uk/)	Survey reports and associated EIA information for the Broadland Northway (NDR).
Various literature and web-based searches	Information on local projects and initiatives of potential relevance as well as some species-level data.
Historic Maps Norfolk (http://www.historic-maps.norfolk.gov.uk/), Google Earth and the national Library of Scotland (https://maps.nls.uk/view/101582387)	Aerial photographs from 1988 and 1946 then intervals from 1999; OS maps from the 1880s and the 1950s-70s.

FIELD SURVEYS

- 2.2 The survey work covered the entire Site and comprised a habitat survey with species scoping (Table 2), with surveys of the Site overlapping with scoping for the nearby constructed wetland. The scoping for species was undertaken using professional experience combined with relevant guidance.

Table 2. Summary of survey methods.

Taxon	Summary	Survey standard / guidelines followed
Phase 1 and botany	19 September 2023	JNCC (2010) ³ and DEFRA (2007) ⁴
Great crested newts	Scoping 20 April 2023	English Nature (2001) ⁵ and ARG (2010) ⁶

³ JNCC (2010) *Handbook for Phase 1 Habitat Surveys*. Joint Nature Conservation Committee, Peterborough.

⁴ DEFRA (2007) *Hedgerow Survey Handbook*. DEFRA, London

⁵ English Nature (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

⁶ ARG (2010) *Great Crested Newt Habitat Suitability Index*. May 2010. ARG UK Advice Note 5. Available from: www.arguk.org

ASSESSMENT

- 2.3 The ecological impact assessment process is summarised below (Table 3) and is compliant with ecological guidance (CIEEM, 2019)⁷. The main stages are the valuing of receptors, assessing impacts and finally identifying the overall significance of impacts.

Table 3. Summary of the ecological impact assessment process.

Stage	Overview	Detail
Valuing receptors		
Valuing important features	A geographic scale is used with levels between 'International' and 'Site'.	The scales considered here are: International (Europe); National (UK); Regional (East Anglia); County (Norfolk); District (Broadland DC); Local (Beeston St Andrew); and Site (the site).
Assessing impacts		
Impact description	Identification of pathways of potential impact	This is the qualitative description of impacts.
Characterisation of impact	Description of changes in terms of positive / negative and extent.	Positive or negative; Extent; Magnitude; Duration; Timing/frequency and Reversibility
Consideration of mitigation	Application of Mitigation Hierarchy	Identification of options such as avoidance, mitigation, compensation and enhancement.
Magnitude of impact	Quantification of the magnitude of any impact	Categorisation of impact, most frequently using professional judgement, as: high, medium, low and negligible.
Significance of impacts		
Significance of impact	Identification of whether an impact undermines biodiversity conservation objectives	Identified with reference to spatial scale and also against the standard scheme shown below (Table 4) to rate significance as 'substantial', 'moderate', 'minor' or 'negligible'.

- 2.4 The importance of a feature that will be significantly affected is identified at the geographical scale at which the impact is significant (Table 4). This value relates directly to the consequences, in terms of legislation, policy and/or development control at the appropriate level. So, a significant negative effect on a feature's importance at one level would be likely to trigger related planning policies and, if permissible at all, generate the need for development control mechanisms, such as planning conditions or legal obligations, as described in those policies.

Table 4. Determination of significance against the magnitude of impact and importance of receptors.

		Importance of receptor					
		International	National	County	District	Local	Site
Impact magnitude	High	Substantial	Substantial	Moderate	Moderate	Minor	Negligible
	Medium	Substantial	Substantial	Moderate	Minor	Minor	Negligible
	Low	Substantial	Moderate	Minor	Minor	Negligible	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible

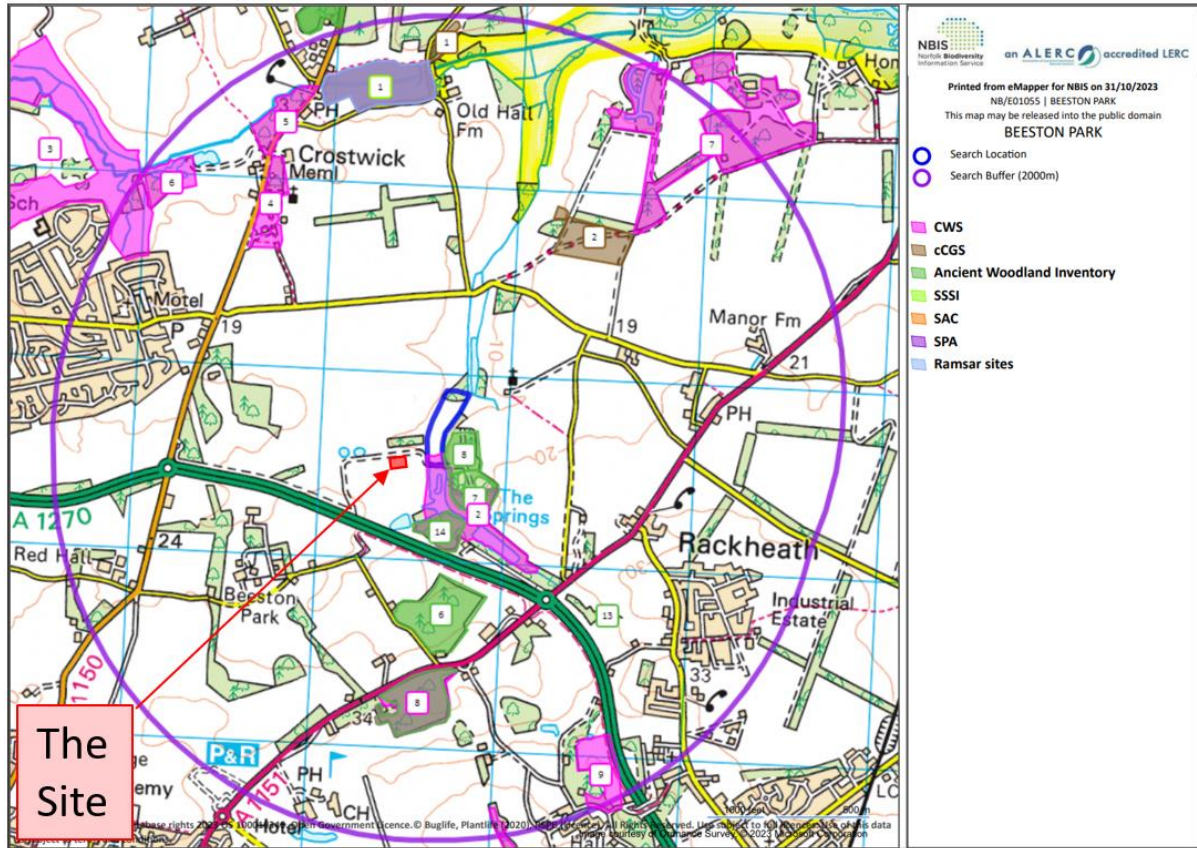
⁷ CIEEM (2019) *Guidelines for Ecological Impact Assessment (EclA)*. Chartered Institute of Ecology and Environmental Management, Hampshire.

3. DESIGNATED SITES

OVERVIEW

3.1 Designated sites are distributed through much of the surrounding landscape (Figure 1), of which the nearest is associated with the valley bottom of Dobbs Beck (a series of lakes with wet woodland and grassland).

Figure 1. Designated sites within 2km. The search radius is around the proposed constructed wetland to the east (outlined in blue).



STATUTORY SITES

3.2 Crostwick Marsh Site of Special Scientific Interest (SSSI) is the only site with statutory designation within 2km, at international, Nature Directives and national scales (Table 5). It is located 1.8km north of the Site and is effectively upstream of the Site.

Table 5 Statutory sites within 2km.

Designation level	Name	Designated features
International	Broadland Ramsar Site	<ul style="list-style-type: none"> Wetland vegetation, fen orchid, a wetland snail and otters. Wintering wildfowl (one species of swan, three ducks and two goose). Numerous rare and scarce plants and invertebrates.
Nature Directives	The Broads Special Area of Conservation	<ul style="list-style-type: none"> Seven types of wetland vegetation. Fen orchid. Two species of aquatic/wetland snail. Otters.

Designation level	Name	Designated features
Nature Directives	Broadland Special Protection Area	<ul style="list-style-type: none"> • Breeding bittern and marsh harrier. • Wintering wildfowl (two swan species and three ducks). • Wintering hen harrier. • Wintering ruff.
National	Croswick Marsh SSSI	Unimproved valley meadow supporting a series of intergrading plant communities ranging from damp neutral grassland through species-rich fen grassland to tall fen in the valley bottom. Marshland birds are well represented with breeding snipe, woodcock, lapwing, grasshopper warbler and sedge warbler.

NON-STATUTORY SITES

3.3 There are nine County Wildlife Sites (Table 6a) and two Candidate County Geodiversity Sites (cCGS) (Table 6b) within 2km. There are also six blocks of Ancient Woodland within 2km.

Table 6a. County Wildlife Sites within 2km.

Name, CWS no. & [map ref]	Location	Description
Ladies Wood, Church Carr & Springs 1393 [2]	116m south-east	See Appendix 2 for the full citation. It was notified in 1984 and last surveyed in 1996. This site has various woodland, grassland and standing water habitats. The lakes are generally species poor and fringed by willow (<i>Salix cinerea</i>) dominated carr. There are two areas of marshy grassland and one improved grassland step. Apart from an area of lime (<i>Tilia x vulgaris</i>) coppice the woodlands are dominated by oak (<i>Quercus robur</i>) and sweet chestnut (<i>Castanea sativa</i>). There has been some planting of deciduous trees throughout, otherwise no other discernible management. Part of this wood is ancient woodland.
Tollshill Wood 2021 [8]	1.12km south	Ancient, broad-leaved semi-natural woodland, dominated by sweet chestnut with frequent oak and beech (<i>Fagus sylvatica</i>), sited on former heathland east of Norwich. Abundant bluebells (<i>Hyacinthoides x non-scripta</i>) are present in the ground flora.
Croswick Common (South) 1402 [4]	1.17km north-west	Well used by visitors, particularly for walking dogs, the site is part of a common and a public footpath crosses it. Present management is restricted to path clearance and mowing near the road. Situated on sandy soils containing many shallow hollows, much of the site is tall herb or rank grassland with dense scrub although there is a small area of oak woodland.
Wroxham Hall Woods 1406 [7]	1.28km north-east	A large area of interconnected woodlands of different types in the gently rolling landscape of the Bure valley. Much of the woodland is used for game rearing and shooting.
Croswick Common (North) 1403 [5]	1.63km north-west	In a valley and consisting of woodland, scrub and fen type communities. It is part of the common and has a public footpath along the south and south-western edges and is used by local people for dog walking. The stream is a tributary of the River Bure. A build-up of plant litter means this is beginning to dry out.
Gazebo Farm, Rackheath 2322 [9]	1.85km south-east	The ponds all have great crested newt populations. Habitats include grassland over free draining soils with ponds, areas of planted scrub and older deciduous woodland with ponds. An artificial bat house and several reptile refugium and hibernacula have been created around the site.
Reservoir Meadow 1404 [6]	1.73km north-west	Damp alder (<i>Alnus glutinosa</i>) carr with semi-improved grassland and areas of tall rank common reed (<i>Phragmites australis</i>). The grassland is seasonally grazed and the whole site is used for shooting with a game rearing pen. A number of dykes cross the site; the main water-carrying dykes run west-east; there is a small lake.

Name, CWS no. & [map ref]	Location	Description
Spixworth Meadows 1396 [3]	1.70km west	The majority is damp semi-improved grassland with areas crossed by water-logged mesotrophic ditches. To the south and east of the site there are areas of scrub and woodland. The meadows are grazed by horses and the site has informal access and is mainly used by local people. Contains two shallow valleys leading to a tributary of the River Bure.
Paine's Yard Wood, The Owlery & March Covert 1392 [1]	1.90km south	Paine's Yard Wood and The Owlery are woodlands of largely native species of a varied structure, including abundant deadwood and stored coppice. Mature ash (<i>Fraxinus excelsior</i>) dominates, much of it from large coppice stools. Oak and birch (<i>Betula pendula</i>) are frequent and hazel (<i>Corylus avellana</i>) coppice dominates some areas; there are a number of non-native tree species in the canopy, including sweet chestnut (<i>Castanea sativa</i>) and sycamore (<i>Acer pseudoplatanus</i>).

Table 6b. Candidate County Geodiversity Sites within 2km.

Name, cCGS no & [map ref]	Location	Description
Dobbs Plantation Pit BRL52 [2]	950m north-east	Disused quarry. Exposure of early Pleistocene Pre-Pastonian sediments of the Wroxham Formation, Dobbs Member. Site represents appearance of <i>Macoma balthica</i> . An important site for correlation of marine and terrestrial sequences. Vertebrate fossils recovered from the basement bed.
Wood Farm Pit BRL33 [1]	1.9km north	Disused quarry. Exposure of the early Pleistocene Norwich Crag basement bed overlying Cretaceous Chalk.

3.4 The Site lies within an area identified as particularly relevant for creating habitat for pollinating insects, termed a *B-Line* ('bee-line'). This is part of a project overseen by Buglife – The Invertebrate Conservation Trust and fits within the National Pollinator Strategy (DEFRA 2015⁸); it is described as follows:

“The B-Lines are a series of ‘insect pathways’ running through our countryside and towns, along which we are restoring and creating a series of wildflower-rich habitat stepping stones. They link existing wildlife areas together, creating a network, like a railway, that will weave across the British landscape. This will provide large areas of brand new habitat benefiting bees and butterflies– but also a host of other wildlife”. The Site is also within what is termed an Important Invertebrate Area⁹ for wetland invertebrates, although only broad-scale mapping is currently available. Also, the Site is identified as being with a Green Infrastructure Corridor (Norfolk CC, 2018¹⁰).

⁸ <https://www.buglife.org.uk/our-work/b-lines/b-lines-east-and-midlands-of-england/>

⁹ <https://www.buglife.org.uk/our-work/important-invertebrate-areas/>

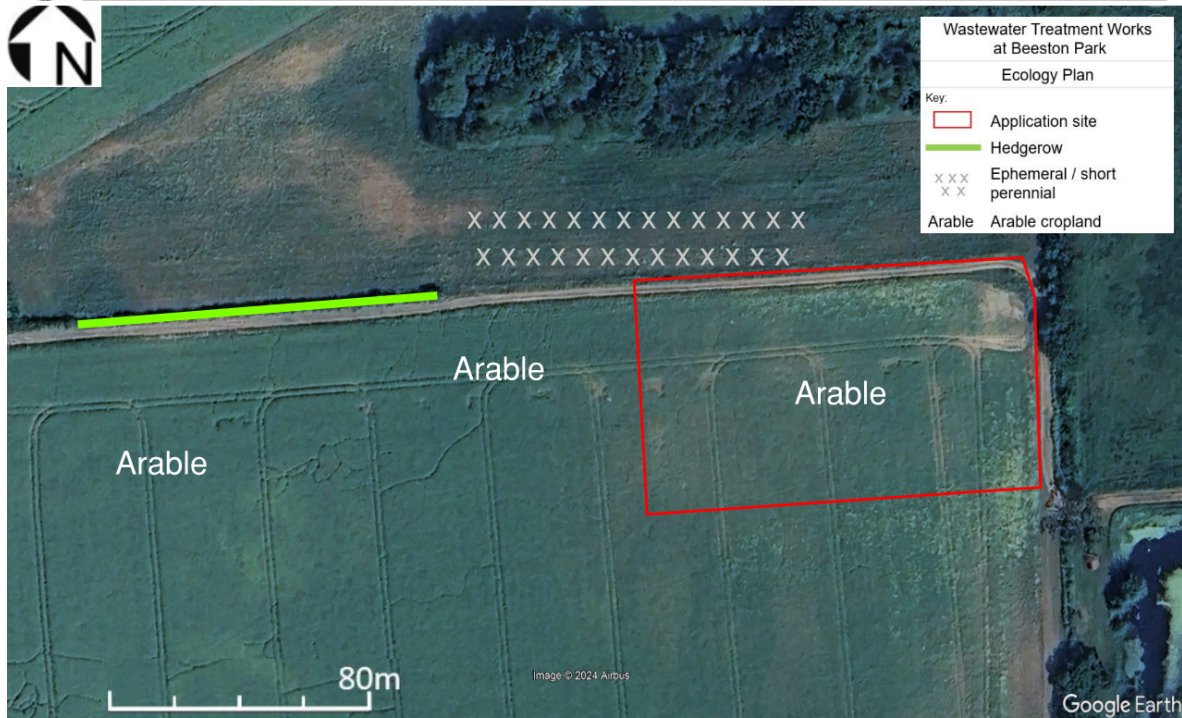
¹⁰ Norfolk CC (2018) *Norfolk Green Infrastructure Mapping Project Report*. Available from: https://www.norfolk.gov.uk/media/5037/norfolk-green-infrastructure-mapping-project-july_18_v4.pdf

4. PHASE 1 DESCRIPTION

OVERVIEW

- 4.1 The Site (Figure 2) comprises a roughly rectangular plot within an existing arable field adjacent to a regularly used farm track. The soil type as shown on MAGIC within the Site as a 'freely draining slightly acid sandy soil' and to the east the soil is 'free draining slightly acid loamy soil'

Figure 2. Site layout.



- 4.2 The habitats on-Site are:

- Hedgerow. Alongside the track is a length of hedgerow, which is a straggly structure trimmed to ~2m and mainly hawthorn *Crataegus monogyna* with elder *Sambucus nigra*, wild plum *Prunus* species and dog rose *Rosa canina*.
- Arable. The plot is on arable cropland, under oil seed rape in 2022. At the time of survey herbs were a sparse component with only scattered groundsel *Senecio vulgaris*, fumitory probably *Fumaria officinalis*, pineappleweed *Matricaria discoidea* and scentless mayweed *Tripleurospermum inodorum*.
- Ephemeral / short perennial vegetation is present as narrow fringes of vegetation along the track, over compacted substrate. Only common and ubiquitous species were noted.

- 4.3 Off-Site immediately north of the track is an area of fallow or ephemeral / short perennial vegetation. Google Earth images show occasional cropping of this area but since the 2010s it has been under an unmanaged sward but appears to have been ploughed in 2022, and the vegetation presumably dates from then. The sward is a tall grass-dominated sward of cocksfoot *Dactylis glomerata*, false oat grass *Arrhenatherum elatius*, Yorkshire fog *Holcus lanatus* and creeping bent *Agrostis stolonifera*, with frequent tall ruderals, mainly creeping thistle *Cirsium arvense* and curled dock *Rumex crispus*, with also broad-leaved dock *Rumex obtusifolius*, spear thistle *Cirsium vulgare*, ragwort *Jacobaea vulgaris*, and field horsetail

Equisetum arvense. Lower-growing herbs are present at low frequencies, those noted being creeping cinquefoil *Potentilla reptans*, ribwort plantain *Plantago lanceolata*, ground ivy *Glechoma hederacea* and creeping buttercup *Ranunculus repens*.

PLANTS

- 4.4 The data search returned records for 60 or so species associated with wetland, open grassland/arable and woodland. The cropping area extended to the field boundary and no arable herbs of note were recorded. Plants are scoped out from specific consideration.

5. SPECIES

BATS

- 5.1 A moderately rich assemblage of bats is known locally, with 9 species recorded within 2km: barbastelle, serotine, noctule, Daubenton's, Natterer's, common pipistrelle, Nathusius' pipistrelle, soprano pipistrelle and brown long-eared. The records are mostly from field recordings by the Norfolk Bat Survey¹¹. The nearest roost is for Natterer's bat, recorded in 2011 within a Site boundary hedgerow tree ~300m to the north-east.
- 5.2 The nearest European Protected Species Mitigation Licence that has been granted is for a site 2.6km south for common pipistrelle and brown long-eared.
- 5.3 The Site is arable, without any trees on-Site or nearby:
- Roosts are scoped-out
 - Foraging habitat for bats is of low quality and only occasional foraging bats are likely.

GREAT CRESTED NEWTS

- 5.4 The data search returned 20 records for great crested newts from within 2km, the nearest being 1.1km east of the Site. The nearest European Protected Species Mitigation Licence that has been granted is for a site 4.3km south.
- 5.5 A scoping distance of 250m is used for great crested newts (given the small area a distance of 500m is not necessary), and with reference to the scoping for the NDR (Norfolk CC, 2013¹²). The scoping for ponds here is as follows:
- The Springs and associated lakes are scoped out on the basis of predatory fish, which is consistent with the NDR scoping.
 - A pond 120m west was dry in 2023 and the NDR surveys found one to be dry and the other supporting common frog and smooth newt only¹³.
 - A small pond 55m north was dry in 2023 and in the NDR surveys¹⁴.
- 5.6 Great crested newts are scoped out on the basis that there are no suitable waterbodies within 250m.

BREEDING BIRDS

- 5.7 A diverse range of farmland birds and birds of the wider countryside are reported locally:
- Farmland – greenfinch, kestrel, reed bunting, rook, woodpigeon, yellow wagtail, grey partridge, linnet, skylark, starling, stock dove, tree sparrow, turtle dove and yellowhammer.
 - Wider countryside – bullfinch, cuckoo, dunnoek, house sparrow, mistle thrush, song thrush, sparrowhawk, spotted flycatcher, tawny owl and wren.

¹¹ www.bat_survey.org

¹² Norfolk CC (2013) *Norwich Northern Distributor Road. Great Crested Newt Surveys: Pond Locations*. Available from Pins Website loc. cit.

¹³ NDR ref: 23 and 24.

¹⁴ NDR ref: 25

5.8 The Site itself lacks higher value features for breeding birds, e.g. weed-rich margins. Any impact on farmland birds would be very low given that the scheme only occupies a small area within the wider field (which is >10ha in area).

REPTILES

5.9 One record for grass snake was returned from the data search, from 1.88km south of the site. The surveys for the NDR¹⁵ only surveyed what is now the roadside verge and the land immediately adjacent, without any reptiles being found. Surveys for the constructed wetland in 2023 reported grass snakes within the field margin vegetation.

5.10 Reptiles are scoped out from the current Site as there is no suitable vegetation (e.g. rank grass sward), and it is relatively distant from the core wetland area likely to be used by reptiles.

SMALL MAMMALS

5.11 Small mammals are scoped as follows:

- Badgers. There are four records of badgers from within 2km, the nearest being a road-killed individual 650m north of the site. No evidence was found on-Site or at accessible off-Site areas nearby.
- Hedgehogs are known from 16 records within 2km. It is possible that hedgehogs utilise the Site for foraging but the extent of native vegetation is sufficiently low for these to be scoped out.

INVERTEBRATES

5.12 The local invertebrate assemblage broadly consists of:

- Species of open dry grassland, which is a microhabitat not present on-Site, comprising a ground-nesting bee and a widespread but declining butterfly.
- Wetland species comprising a single beetle (*Donacia crassipes* Coleoptera: Chrysomelidae) associated with water lilies, and Desmoulin's whorl snail *Vertigo moulinsiana* (Gastropoda: Vertiginidae).
- Widespread but declining moths with generalist habitat requirements (Butterfly Conservation, 2007¹⁶) recorded from trapping stations in nearby villages. Twenty or so species are reported.

5.13 The Site itself lacks any wetland habitat and the overall extent of native vegetation is very limited, therefore invertebrates are scoped out. For reference, the location of compounds is not known, but if the block of vegetation to the north is used then the evaluation would be unchanged.

¹⁵ Norfolk CC (2013) *Norwich Northern Distributor Road. Reptile Survey*. Available from Pins Website loc. cit.

¹⁶ Butterfly Conservation (2007) *Biodiversity Action Plan – Moths*. Available from: <https://butterfly-conservation.org/our-work/reports-and-factsheets/biodiversity-action-plans>

6. DISCUSSION

EVALUATION

Habitats and plants

- 6.1 The hedgerow alongside the track qualifies as a priority hedgerow Habitat of Principal Importance, but no other priority habitats are present (cf. Maddock, 2011¹⁷):
- 6.2 The Site is of very low ecological value in terms of its habitats, of value at the local scale only.

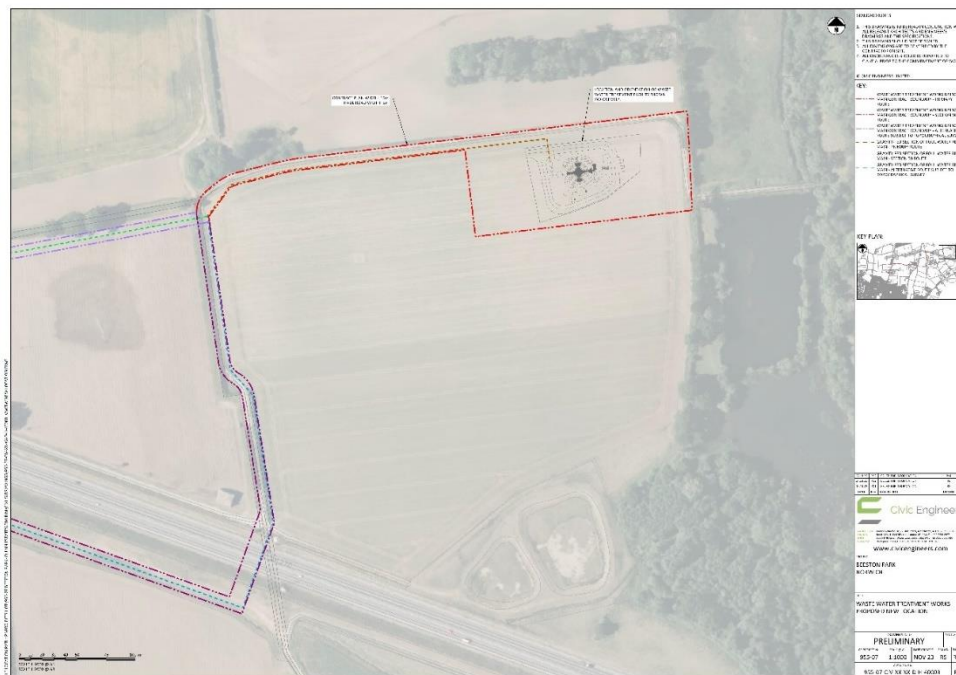
Species

- 6.3 The species scoped in are:
- Foraging bats.
 - Nesting birds.
- 6.4 All of these species would be present in very low numbers, as minor components of larger local populations, the Site lacks particularly scarce or specialist resources or features. The Site is of very low value for species, of value at the local scale only.

IMPACTS

- 6.5 The scheme will have access off the track and the treatment works infrastructure will be located centrally with surrounding landscaping (Figure 3). The impacts of the scheme are considered to be very low and of negligible significance. It is not known where Site compounds would be located, but even if the compound is on the block of vegetation to the north, then the assessment of impacts would be unchanged.

Figure 3. Broad layout of the scheme.



¹⁷ Maddock, A. (2011) *UK BAP Priority Habitat Descriptions*. Available from: <https://data.jncc.gov.uk/data/2728792c-c8c6-4b8c-9ccd-a908cb0f1432/UKBAP-PriorityHabitatDescriptions-Rev-2011.pdf>

MITIGATION

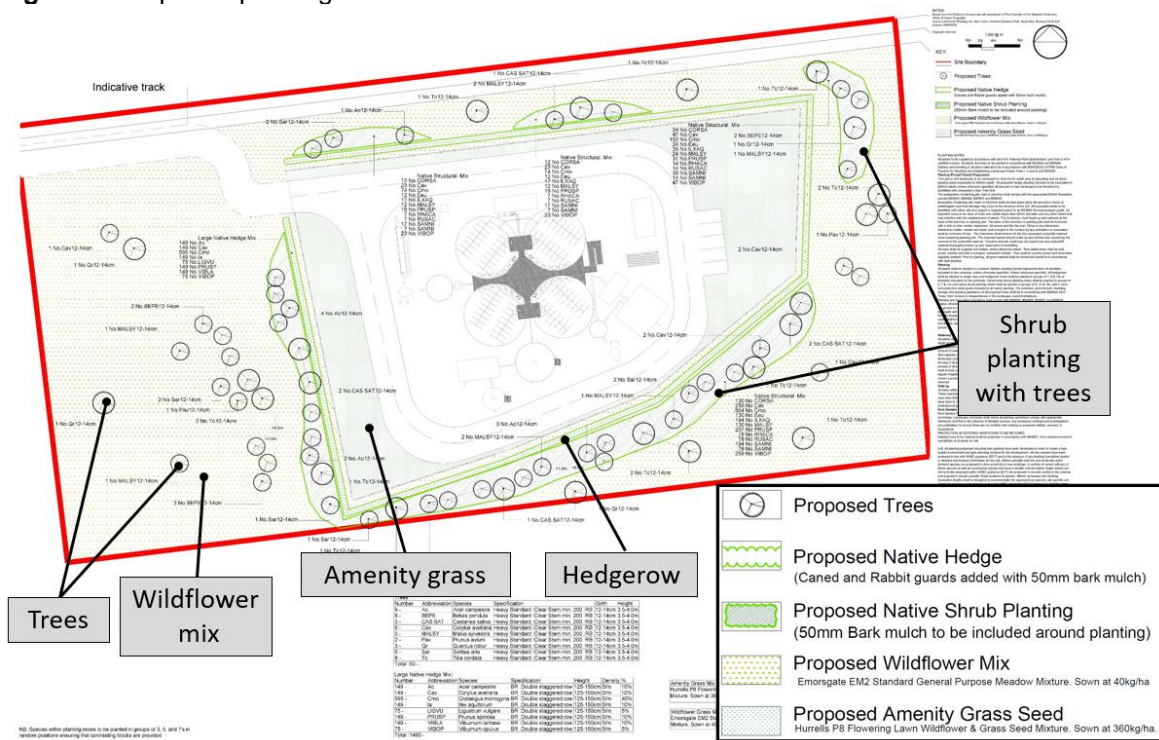
6.6 The following mitigation requirements are identified:

- Nesting birds will require consideration in advance of vegetation clearance if this is undertaken during the March to August period inclusive. It is not expected that woody vegetation removal is required, and although the risk of ground-nesting birds is low they would be relevant to this mitigation (within the Site and if the compounds are to the north).
- Reptiles. The likelihood of grass snakes is considered sufficiently low for formal mitigation to not be required. However, if works are not to commence until 2025 and the vegetation to the north develops a ranker character with tussocks then a phased displacement approach to clearance should be undertaken.

ENHANCEMENT

6.7 Soft landscaping is the most appropriate Site-wide enhancement, using appropriate native species and species of known wildlife value. As well as providing blossom for pollinators, key for many species groups is the need for insect prey, for bats and also for the chicks and fledglings of many bird species. The scheme layout is shown below and an extensive area of high value landscaping is included (Figure 4).

Figure 4. Proposed planting.



RESIDUAL IMPACTS

6.8 The residual impacts of the scheme are considered to be positive based on the substantial increase in non-arable vegetation.

7. CONCLUSIONS

- 7.1 The habitats on-Site are arable cropland, a short length of hedgerow plus sparse vegetation along the access track. A larger block of ephemeral / short perennial vegetation lies north of the track.
- 7.2 The hedgerow alongside the track qualifies as a priority hedgerow Habitat of Principal Importance, but no other priority habitats are present.
- 7.3 The Site is of very low ecological value in terms of its habitats, of value at the local scale only.
- 7.4 The species scoped in are:
- Foraging bats.
 - Nesting birds.
- 7.5 All of these species would be present in very low numbers, as minor components of larger local populations, and the Site is without particularly scarce or specialist resources or features. The Site is of very low value for species, of value at the local scale only.
- 7.6 The scheme will have access off the track and the treatment works infrastructure will be located centrally with surrounding landscaping. The impacts of the scheme are considered to be very low and of negligible significance.
- 7.7 The follow construction phase mitigation requirements are identified:
- Nesting birds will require consideration in advance of vegetation clearance if this is undertaken during the March to August period inclusive. It is not expected that woody vegetation removal is required, and although the risk of ground-nesting birds is low they would be relevant to this mitigation (within the Site and if the compounds are to the north).
 - Reptiles. The likelihood of grass snakes is considered sufficiently low for formal mitigation to not be required. However, if works are not to commence until 2025 and the vegetation to the north develops a ranker character with tussocks then a phased displacement approach to clearance should be undertaken.
- 7.8 Soft landscaping is the most appropriate Site-wide enhancement, and an extensive area of high value landscaping is included within the scheme.
- 7.9 The residual impacts of the scheme are considered to be positive based on the substantial increase in non-arable vegetation.

8. APPENDIX 1: PHOTOGRAPHS



Figure A1. The Site (plot) looking south-east.



Figure A2. Ephemeral / short perennial vegetation to the north of the Site.

9. APPENDIX 2: LEGISLATION

Non-technical account of relevant legislation and policies.

Species	Legislation	Offence	Licensing
Bats: European protected species	Conservation of Habitats and Species Regulations 2017 Reg 41	Deliberately capture, injure or kill a bat; deliberate disturbance of bats; or damage or destroy a breeding site or resting place used by a bat. [The protection of bat roosts is considered to apply regardless of whether bats are present.]	A Natural England (NE) licence in respect of development is required.
Bats: National protection	Wildlife and Countryside Act 1981 (as amended) SQ.	Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb a bat in such a place.	Licence from NE is required for surveys (scientific purposes) that would involve disturbance of bats or entering a known or suspected roost site.
Birds	Wildlife and Countryside Act 1981 (as amended) S.1	Intentionally kill, injure or take any wild bird; intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built. Intentionally or recklessly disturb a Schedule 1 species while it is building a nest or is in, on or near a nest containing eggs or young; intentionally or recklessly disturb dependent young of such a species [e.g. kingfisher].	No licences are available to disturb any birds in regard to development.
Great crested newt: European protected species	Conservation of Habitats and Species Regulations 2017 Reg 41	Deliberately capture, injure or kill a great crested newt; deliberate disturbance of a great crested newt; deliberately take or destroy its eggs; or damage or destroy a breeding site or resting place used by a great crested newt.	Licences issued for development by Natural England.
Great crested newt: National protection	Wildlife and Countryside Act 1981 (as amended) S.9	Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb it in such a place.	A licence is required from Natural England for surveying and handling.
County Wildlife Sites	There is no statutory designation for local sites.	Local sites are given protection through policies in the Local Development Plan.	Development proposals that would potentially affect a local site would need to provide a detailed justification for the work, an assessment of likely impacts, together with proposals for mitigation and restoration of habitats lost or damaged.